

National Park Service

U.S. Department of the Interior

Little Bighorn Battlefield National Monument  
Montana

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# Environmental Assessment / Assessment of Effect

## Rehabilitate Tour Road

June 2005

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**U.S. Department of the Interior  
National Park Service**

**Environmental Assessment / Assessment of Effect  
Rehabilitate Tour Road**

**Little Bighorn Battlefield National Monument  
Big Horn County, Montana**

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**SUMMARY**

The National Park Service is considering rehabilitating, restoring, resurfacing, and reconstructing approximately 5.1 miles of the Tour Road and associated parking areas in Little Bighorn Battlefield National Monument, Big Horn County, Montana. The purpose of taking action is to improve poor pavement and shoulder conditions on 5.1 miles of the Tour Road; enhance resource protection; provide a uniform and greater width to 5.1 miles of the Tour Road; and improve traffic flow and capacity at the visitor center and Reno-Benteen parking areas. This action is needed in order to repair structural deficiencies to the Tour Road, improve visitor experience and safety, reduce resource damage along the Tour Road and at the visitor center and Reno-Benteen parking areas, and increase parking capacity at the visitor center and Reno-Benteen parking areas.

This environmental assessment / assessment of affect examines in detail three alternatives: No-Action, Road Widening - 24' Width (NPS Preferred Alternative), and Road Widening - 22' Width. The Road Widening - 24' Width (NPS Preferred Alternative) includes rehabilitating, restoring, resurfacing, and reconstructing the Tour Road and the visitor center and Reno-Benteen parking areas by improving the condition of the pavement and its underlying structure. In addition, the Tour Road would be widened to have a 24-foot top width consisting of 11-foot travel lanes and 1-foot shoulders. The visitor center and Reno-Benteen parking lots would be reconstructed to provide increased parking capacity and improved traffic flow.

The Road Widening - 24' Width (NPS Preferred Alternative) would have no impacts on cultural landscapes; Indian trust resources; threatened or endangered species; geology; floodplains; wilderness values; prime and unique farmlands; land use plans and policies; land ownership / right-of-way; and environmental justice.

Under the Road Widening - 24' Width (NPS Preferred Alternative), adverse negligible short-term impacts, lasting only as long as construction would occur to species of concern; wildlife; vegetation; soils; air quality; soundscapes; visual resources; water quality and hydrology. Short-term impacts to visitor experience and socioeconomic environment from construction-related activities would be adverse minor. Species of concern, wildlife and vegetation long-term impacts would be adverse negligible from loss of vegetation. Long-term impacts to geology and soils would be adverse negligible from loss of soils. Long-term impacts to soundscapes would be adverse negligible from potential increases in motor noise levels associated with the expanded parking areas. Visual resources long-term impacts would be adverse negligible to minor from construction of the Preferred Alternative. Wetlands short- and long-term impacts would be adverse negligible, however, the permanent area of disturbance would be less than the area of temporary disturbance during construction. Archeological resources, historic structures, and ethnographic resources impacts would be adverse negligible to minor from construction of the Preferred Alternative.

Beneficial effects of the Road Widening - 24' Width (NPS Preferred Alternative) are as follows: negligible long-term impacts on unique natural areas from restoration of vegetation; negligible short-term impacts on the socioeconomic environment for construction businesses and workers; and minor to moderate long-term impacts on the visitor experience from the roadway and parking area improvements.

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## ACRONYMS AND ABBREVIATIONS

3R	rehabilitate, restore, and resurface
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADT	average daily traffic
APE	Area of Potential Effect
ARIS	Air Resources Information System
ATS	Alternative Transportation Systems
BA	Biological Assessment
BMPs	best management practices
BIA	Bureau of Indian Affairs
CBHMA	Custer Battlefield Historical and Museum Association
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
dbh	diameter at breast height
DO	Director's Order (NPS)
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESF	Environmental Screening Form
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Maps
FLHP	Federal Lands Highway Program
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
FTA	Federal Transit Administration
GMP	general management plan
GPR	Ground Penetrating Radar
kph	kilometers per hour
LCS	List of Classified Structures
LIBI	Little Bighorn National Monument
MDEQ	Montana Department of Environmental Quality
MWAC	Midwest Archeological Center
MPDES	Montana Pollutant Discharge Elimination System
mph	miles per hour
NAGPRA	Native American Graves Protection and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NM	National Monument
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PMC	Plant Materials Center
ROW	right-of-way
RMP	resource management plan
RV	recreational vehicle

<b>SADT</b>	<b>seasonal average daily traffic</b>
<b>SPA</b>	<b>Stream Protection Act (Montana)</b>
<b>SOF</b>	<b>Statement of Findings</b>
<b>SHPO</b>	<b>State Historic Preservation Office</b>
<b>TEA – 21</b>	<b>Transportation Equity Act for the 21<sup>st</sup> Century</b>
<b>USC</b>	<b>United States Code</b>
<b>USDA</b>	<b>U.S. Department of Agriculture</b>
<b>USFWS</b>	<b>United States Fish and Wildlife Service</b>
<b>WFLHD</b>	<b>Western Federal Lands Highway Division</b>

# INTRODUCTION

The National Park Service (NPS) in cooperation with the Federal Highway Administration (FHWA) and the Western Federal Lands Highway Division (WFLHD) proposes to rehabilitate approximately 5.1-miles of the Tour Road, connecting the Custer Battlefield with the Reno-Benteen Battlefield. The two battlefields are located in Little Bighorn Battlefield National Monument, Big Horn County, Montana. See Figure 1 for a map of the project vicinity. The proposed project is located within Little Bighorn Battlefield National Monument (LIBI), as well within the park 60' right-of-way easement that links Custer Battlefield to Reno-Benteen Battlefield.

The famous Battle of the Little Bighorn between 12 companies of the 7th United States Cavalry and the Sioux and Northern Cheyenne Indians was fought at Little Bighorn Battlefield National Monument on June 25 and 26, 1876. Lieutenant Colonel George A. Custer and about 268 of his forces were killed. The national monument occupies approximately 765 acres (all federal) in south-central Montana. It consists of two separate parcels. The main parcel contains the ridge where Custer made his last stand against the Indians. The second parcel contains the site of the Reno-Benteen defense perimeter. The two parcels are connected by the Tour Road.

The Tour Road is the only road in the monument (Custer Battlefield and Reno-Benteen Battlefield) open to the public, connecting the two battlefields by traversing Crow Tribe reservation lands and three private landholder's lands, which separate the two battlefields. The Tour Road is one of the monument's principal visitor activities, enabling visitors to follow and observe the sites related to the battle. The road has been resurfaced many times and is in fair to poor condition. The existing road is 17 -20 feet wide and is posted at 25 to 35 mph/40-56 kph.

## NEED FOR AND PURPOSE OF ACTION

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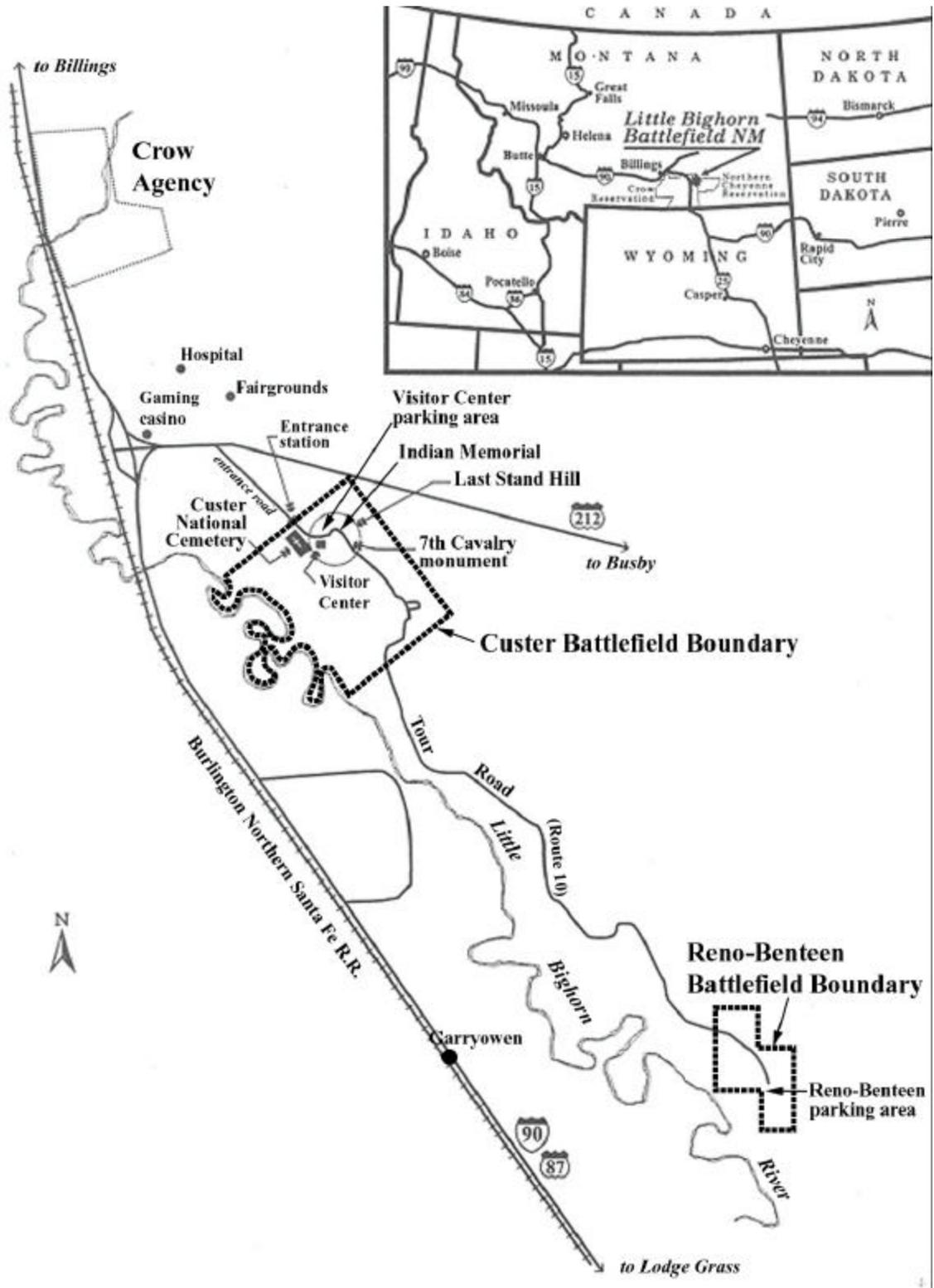
The purpose of the action is to improve poor pavement and shoulder conditions on the Tour Road; enhance resource protection; provide a uniform and greater width to the Tour Road; and improve traffic flow and capacity at the visitor center and Reno-Benteen parking areas.

This action is needed to repair structural deficiencies to the Tour Road, improve visitor experience and safety, reduce resource damage along the Tour Road and at the visitor center and Reno-Benteen parking areas, and increase parking capacity at the visitor center and Reno-Benteen parking areas.

Poor pavement structure has resulted in increased rutting of the Tour Road due to heavy vehicle loads, and the current practice of patching the rutting areas with asphalt is a temporary solution. The existing pavement and structural conditions on the Tour Road detract from the current visitor experience. Recreational vehicle traffic poses potential safety concerns, as these large vehicles tend to veer off of the roadway in order to avoid oncoming traffic because of the narrow roadway. The existing steep pavement edge makes it difficult for these vehicles to maneuver back on to the roadway safely. The current design of the Tour Road and Reno-Benteen parking area results in vehicles frequently traveling off paved surfaces, affecting both natural and cultural resources. With the projected increase in visitor traffic, congestion at the visitor center and Reno-Benteen parking areas is expected to increase, resulting in further deterioration of the visitor experience.

An environmental assessment (EA) analyzes all alternatives and their impacts on the environment and identifies a preferred alternative. This environmental assessment / assessment of effect has been

Figure 1. Project Vicinity Map



prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (40 CFR 1508.9), and NPS *Director's Order (DO) #12: Conservation Planning, Environmental Impact Analysis, and Decision-making* and its accompanying handbook (NPS 2001a). In accordance with the regulations of the Advisory Council on Historic Preservation (ACHP) (36 CFR 800.8), this environmental assessment / assessment of effect also complies with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470 et seq.).

## **PURPOSE, SIGNIFICANCE, AND MISSION OF THE PARK**

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An essential part of the planning process is understanding the purpose, significance, and mission of the monument.

### **Monument Purpose**

Purpose statements for a monument / park express why the monument / park was set aside as part of the national park system. They are grounded in a thorough analysis of the monument's / park's legislation and legislative history, and they provide fundamental criteria against which the appropriateness of plan recommendations, operational decisions, and actions are tested.

“The purpose of Little Bighorn Battlefield National Monument is to preserve, protect, and interpret the historic, cultural, and natural resources, including lands, pertaining to the Battle of the Little Bighorn.

Little Bighorn Battlefield National Monument was officially recognized and designated a national cemetery under the headquarters of the Army. Subsequently, a boundary, the Reno-Benteen unit, and the erection of a public historic museum were authorized. In 1940, Custer Battlefield National Cemetery was redesignated a national monument. In 1991, the site was redesignated Little Bighorn Battlefield National Monument, and an Indian Memorial to honor Native American participation in the battle was authorized” (NPS 2002a).

### **Monument Significance**

Monument / park significance statements capture the essence of the monument's / park's importance to the nation's natural and cultural heritage. They describe the monument's / park's distinctiveness and why an area is important within regional, national, and global contexts. Significance statements help monument / park managers focus their efforts and funding on attributes that are directly related to the purpose of the monument / park.

“The site commemorates one of America's most famous battles, the Battle of the Little Bighorn, when two culturally divergent forces clashed in a life and death struggle to on one hand, perpetuate national expansion, and on the other, to preserve a nomadic way of life.

The Battle of the Little Bighorn fought on June 25-26, 1876 at Little Bighorn Battlefield National Monument, symbolized a high water mark in a 400-year struggle between Euro-Americans and Native Americans. The defeat of 12 companies of the Seventh United States Cavalry by Lakota, Cheyenne and

Arapaho warriors, although militarily insignificant, has achieved a symbolic dimension from film, theater, art, and other media.

Little Bighorn Battlefield National Monument is a special place, largely unchanged, allowing profound personal reflection on the historic event, and the American consciousness” (NPS 2002a).

## Monument Mission

The monument / park purpose describes the specific reason(s) the monument / park was established. Monument / park significance is the distinctive feature(s) that make the monument / park different from any other. Together, purpose and significance lead to a concise statement - the mission of the monument / park. Monument / park mission statements describe conditions that exist when the legislative intent for the monument / park is being met.

“Little Bighorn Battlefield National Monument preserves, protects, and interprets the historic, cultural, and natural resources, including lands, pertaining to the Battle of the Little Bighorn, leaving them unimpaired, and provides visitors with an understanding of the historic events leading up to the battle, the encounter itself, and the consequences by both the military and American Indian contingents, for the enjoyment of future generations” (NPS 2002a).

## PROJECT BACKGROUND, PREVIOUS PLANNING, AND SCOPING

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### Project Background

**Existing Roadway and Parking System.** Little Bighorn Battlefield National Monument’s original tour road was dirt when it was built through the monument in 1938. It has since been overlaid with gravel and asphalt; but not widened to accommodate increased traffic and larger vehicles. The present road has no center line or shoulders and has been identified as a major safety hazard in the monument (NPS 1999a).

This project has been initiated because of unacceptable results obtained through the conception and completion of a 3R (rehabilitate, restore, and resurface) project completed in 2002. The intent of the 2002 project was to rehabilitate poor pavement and drainage conditions along the existing Tour Road between Custer Battlefield and Reno-Benteen Battlefield. Additionally, the 2002 project aimed to widen the existing road bench without performing any earthwork. Edge drops and poor pavement conditions resulting from this project were partially corrected, but additional work is required to improve this unsafe condition.

The Tour Road is the only road in the monument (Custer Battlefield and Reno-Benteen Battlefield) open to the public. It connects the two battlefields by traversing Crow Tribe reservation lands and three private landholder’s lands, which separate the two battlefields. The Tour Road has a 60’ easement on all NPS lands. The existing road is 17 - 20 feet wide and is posted at 25 to 35 mph/40-56 kph. The current peak seasonal average daily traffic (SADT), June through August, is 2,000 vehicles per day. SADT is expected to reach 2,800 by year 2022 (NPS 2004a).

The visitor center parking area is the main parking area at the monument. The entire parking area consists of three smaller lots: the visitor center parking lot, the main road parking lot, and the

Stonehouse parking lot. The visitor center parking lot currently provides 63 parking spaces for standard-size vehicles (including two handicapped parking spaces and four spaces designated for NPS parking only). The visitor center parking lot provides 34 parking spaces for standard-size vehicles. Stonehouse parking lot provides 35 parking spaces for standard-size vehicles. There are 21 spaces for oversized vehicles in a parallel-parking lane on the Tour Road, adjacent to the visitor center and main road parking lots.

The Tour Road splits into one-way travel lanes through the visitor center parking lot. The westbound (outbound) lane runs north of the parking lot alongside the oversized vehicle parking spaces, and functions as a travel lane. The eastbound (inbound) lane, however, runs through the parking lot itself and therefore functions both as a through-travel lane and parking access aisle.

The Reno-Benteen parking lot is located at the end of the Tour Road in Reno-Benteen Battlefield. This lot functions both as a parking lot and as a turnaround loop at the end of the Tour Road. The lot contains 13 parking spaces for standard-size vehicles and two parking spaces for oversized vehicles.

**NPS Park Road Standards.** The 1984 NPS Park Roads Standards state, “The purpose of park roads remains in sharp contrast to that of the federal and state highway systems. Park roads are not intended to provide fast and convenient transportation; they are intended to enhance visitor experience while providing safe and efficient accommodation of park visitors and to serve essential management access needs” (NPS 1984).

The fundamental purpose of national parks, which is to bring humankind and the environment into closer harmony, dictates that the quality of the park experience must be a primary consideration. Full enjoyment of a national park visit depends on a safe and leisurely experience. The distinctive character of park roads plays a basic role in setting this essential unhurried pace. Park roads are designed with extreme care and sensitivity with respect to the terrain and environment. Sound planning and resource preservation practices dictate that park roads lie lightly on the land.

**Federal Lands Highway Program.** This project is funded primarily by the Federal Lands Highway Program - Park Roads and Parkway Program, which is jointly administered by the Federal Highway Administration and the National Park Service. The Federal Lands Highway Program provides funding and Federal Highway Administration support to federal land management agencies for the design, construction, reconstruction, and rehabilitation of each agency’s public road system. Funds are allocated on an annual basis from the Highway Trust Fund, which is funded by the federal motor vehicle gas tax. The intent of the Park Roads and Parkway Program is to maintain and improve the quality and condition of roads, bridges, and tunnels in the national park system.

## Relationship of the Proposed Project with Previous Planning Efforts

NPS planning efforts that can be associated with this project include the monument’s Final General Management and Development Concept Plans (NPS 1995), Little Bighorn Battlefield National Monument, Resource Management Plan (NPS 1999a), Little Bighorn Battlefield National Monument, Traffic Safety Study (RPA 1998), and Federal Lands Alternative Transportation Systems Study, Volume III, Summary of National ATS Needs. (FHWA / FTA 2001).

**Final General Management and Development Concept Plans.** The Little Bighorn Battlefield National Monument *Final General Management Plan and Development Concept Plans* (GMP) was completed in August 1986 and updated in May of 1995 (NPS 1995). The purpose of the GMP is to provide the necessary guidelines and strategies for management and use of Little Bighorn Battlefield National Monument.

The GMP recommended a new visitor orientation / administration facility, located with convenient access from Interstate 90 and would provide initial contact to the monument visitor. The new visitor center was recommended to be located west of Interstate 90, in the vicinity of the Garryowen area near the interstate overpass on public/private land. Visitors would be provided the opportunity to tour the battlefield in a correct, chronological sequence from this new location. Visitors would receive an orientation at the new visitor center and then begin their tour either by bus or by private passenger vehicle. Visitors would proceed to Garryowen on an existing frontage road to Reno's first skirmish line site, and back under Interstate 90 to Reno's Crossing. A new low-speed, one-way road would begin at the Reno's Crossing site and proceed south along the west side of the Little Bighorn River, up Reno Creek, enter the existing Reno-Benteen Battlefield from the south, and connect with the existing Tour Road. From the Reno-Benteen Battlefield, visitors would proceed on the Tour Road to the Custer Battlefield and return to the new visitor center via U.S. Highway 212 and Interstate 90 or the frontage road.

The proposed Rehabilitate Tour Road project would not preclude the long-term recommendations outlined in the GMP. The proposed project would provide a uniform road width and improved parking that would allow for a more comfortable visitor experience while driving their own vehicles until the visitor center is relocated and the Tour Road extended to Garryowen. The intent of the proposed rehabilitation project would be to provide solutions to improve poor pavement and structural conditions of the Tour Road in order to address resource protection, and visitor experience and safety in the monument.

**Little Bighorn Battlefield National Monument, Resource Management Plan.** The Little Bighorn Battlefield National Monument, Resource Management Plan (RMP) supplements the GMP and is intended to provide a working foundation that supports various legal mandates that bear upon resource management actions at the monument. Management objectives included in the RMP include:

- Preserve, protect, and manage all prime resources.
- Preserve the natural and cultural landscape within and outside the monument boundary.
- Provide interpretive facilities and programs that enhance the visitor's understanding of the battlefield's primary mission of preserving and protecting resources related to the battle.
- Develop strategies to work with local landowners, the Bureau of Indian Affairs (BIA), and the Crow Tribe that would result in cooperative management relationships.
- Improve facilities by addressing deficiencies related to the museum collections, staffing requirements, storage space, exhibits, parking lots, Tour Road, etc (NPS 1999a).

Two current "threats" to park resources identified in the RMP that are related to the proposed Rehabilitate Tour Road project include safety concerns on the Tour Road and parking problems at the visitor center. The RMP noted visitor safety concerns related to the existing conditions of the Tour Road, and possible resource damage due to vehicles pulling off the road where there is no shoulder. The RMP notes that several long-term alternatives have been considered to lessen resource damage, such as a new parking lot down below the monument and the use of mass transit into the park proper (NPS 1999a). The proposed project would address visitor safety and resource damage concerns on the Tour Road through rehabilitating poor pavement conditions and widening the road and providing shoulders on both sides of the road and does not preclude the long-term alternatives presented in the RMP.

In addition, the RMP recognized parking problems at the visitor center, as the current facilities do not meet present-day parking demands. The RMP further states “expansion of the parking lot is not an option due to encroachment onto historic resources (battlefield and cemetery)”. Additionally, the RMP noted that the new Indian Memorial would attract more visitors and therefore would further impact already constrained parking, and that the GMP calls for the visitor center to be relocated to Garryowen. The proposed project would address existing and anticipated parking problems at the visitor center parking area identified in the RMP through reconfiguration and expansion away from the cemetery and not into Last Stand Hill.

**Little Bighorn Battlefield National Monument, Traffic Safety Study.** The Little Bighorn Battlefield National Monument, Traffic Safety Study conducted for the monument examined the Little Bighorn Battlefield National Monument with respect to traffic safety and developed a set of recommendations to improve the transportation system (RPA 1998).

Traffic safety and other transportation-related problems were identified through observations of traffic operations, physical roadway features, and parking area facilities in the monument. The safety study notes that according to NPS records and staff, there has not been a motor vehicle accident reported in the monument during the last 20 years. As a result, all of the traffic safety problems discussed in the safety study are based on field observations and are representations of potential safety issues.

The final recommendations in the report included both short- and long-term solutions. Short-term recommendations included minor changes to the road system and parking areas. The long-term recommendations included creating a remote parking area and providing a transit system. This proposed Rehabilitate Tour Road project would not preclude the short- and long-term recommendations, and would provide improved conditions to the Tour Road, visitor center parking area, and Reno-Benteen parking area in order to address visitor safety, and improve visitor experience in the monument for those visitors accessing the monument by tour bus (oversized vehicles), or by private vehicles.

**Federal Lands Alternative Transportation Systems Study, Volume III, Summary of National ATS Needs.** Section 3039 of the Transportation Equity Act for the 21<sup>st</sup> Century (TEA - 21) required the Secretary of Transportation, in coordination with Secretary of the Interior, to “undertake a comprehensive study of alternative transportation needs in national parks and related federal lands”. The goal of the *Federal Lands Alternative Transportation Systems Study, Volume III, Summary of National ATS Needs* was to identify opportunities for application of Alternative Transportation Systems (ATS), or transit, to relieve traffic congestion and parking shortages; enhance visitor mobility and accessibility; preserve sensitive natural, cultural, and historic resources; provide improved interpretation, education and visitor information services; reduce pollution; and improve economic development opportunities for surrounding communities. Little Bighorn Battlefield National Monument was one of the 118 sites identified in the study where transit needs were identified (FHWA / FTA 2001).

The study’s field report for the monument included the transportation conditions, issues and concerns identified, and the ATS solutions provided in the *Little Bighorn Battlefield National Monument, Traffic Safety Study*. The solutions included remote parking with visitor transportation system, visitor center relocation to Garryowen with a shuttle tour system, and shuttle service from the town of Hardin (RPA 1998). In conclusion, the study provided an assessment of need and transportation systems options based on the documented needs. Options included the short- and long-term solutions identified in the *Little Bighorn Battlefield National Monument, Traffic Safety Study*.

This proposed Rehabilitate Tour Road project would not preclude the long-term recommendation, and would provide improved conditions to the Tour Road, visitor center parking area, and Reno-Benteen parking area in order to address resource protection, and improve visitor experience and safety in the monument for those visitors accessing the monument by tour bus (oversized vehicles), or by private vehicles.

## Scoping

Scoping is an early and open process to determine the breadth of environmental issues and alternatives to be addressed in a NEPA document. Scoping is used to identify which issues need to be analyzed in detail and which can be eliminated from in-depth analysis. It also allocates assignments among the interdisciplinary team members and / or other participating agencies; identifies related projects and associated documents; identifies permits, surveys, consultations, and other requirements, and creates a schedule that allows adequate time to prepare and distribute the environmental assessment / assessment of effect for public review and comment before a final decision is made. Scoping efforts include any public, staff, interested agency, or any agency with jurisdiction by law or expertise (including the State Historic Preservation Office, Tribal Historic Preservation Office, and U.S. Fish and Wildlife).

Little Bighorn Battlefield Monument began the internal scoping process with a meeting of appropriate monument staff and resource professionals of the National Park Service on October 7, 2003. This interdisciplinary process defined the purpose and need, identified potential actions to address the need, determined what the likely issues and impact topics would be, and identified the relationship, if any, of the proposed action to other planning efforts at Little Bighorn Battlefield National Monument.

The National Park Service initiated the external scoping process on July 27, 2003 when the monument staff met with Western Federal Lands Highway Division staff to discuss alternative development and design and resource impacts. The U.S. Fish and Wildlife Service (USFWS) was contacted on August 15, 2003 to seek comments on issues, alternatives, concerns and other considerations regarding the proposed action. The State Historic Preservation Officer and the Advisory Council on Historic Preservation were also notified of the project on August 19, 2003 (Appendix A). The Crow Agency was contacted about the proposed action and attended a meeting with monument staff on July 26, 2004. The meeting addressed tribal concerns and the tribe's level of involvement.

NPS staff also met with representatives of both the Custer Battlefield Historical and Museum Association (CBHMA) and Friends of the Little Bighorn Battlefield on June 26, 2004 to discuss issues and concerns. Friends of the Little Bighorn Battlefield expressed concerns about potential impacts to resources from the proposed action, particularly the viewsheds and cultural landscape (viewscape) between the two battlefields and other various locations, including Weir Point.

## ISSUES AND IMPACT TOPICS

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### Issues

NPS staff completed an Environmental Screening Form (ESF) that identified potential issues and impact topics that require additional investigation to address the requirements of the National Environmental Policy Act of 1969 and *Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2001a). These issues were identified from previous

monument planning efforts, input from various interested public groups and individuals, and input from local, state, and federal agencies.

The issues identified were poor road conditions, visitor inaccessibility and negative experiences, insufficient parking capacity, natural and cultural resource preservation, and human / social resource issues.

Other issues identified during scoping include:

- The road corridor traverses two national historic districts listed on the National Register of Historic Places (NRHP) and is within a culturally significant battlefield its entire length. Improvements addressing the transportation issues described above may affect these cultural and historic resources.
- A majority of the road is located within a right-of-way easement on the Crow Indian Reservation and on private land. Improvements addressing the transportation issues described above may affect this right-of-way easement.
- The cultural landscape (viewsapes) and historic scene are integral to the monument's significance and its interpretation. Improvements addressing the transportation issues described above may affect the cultural landscape (viewscape) and historic scenes associated with the monument.

NEPA calls for an examination of the impacts on all components of affected ecosystems and is the charter for the protection of the environment. NEPA requires federal agencies to use all practicable means to restore and enhance the quality of the human environment and to avoid and minimize any possible adverse effects of their actions upon the environment. The preferred alternative was developed to minimize the adverse impact to natural and cultural resources and visitor experience, while protecting health and safety. Issues and mitigation measures are included in the rationale for selection of impact topics selected for detailed analysis or for dismissal from detailed analysis discussed below.

## Impact Topics

After external scoping, the issues and concerns potentially affecting the proposed action alternatives were distilled into distinct impact topics to facilitate the analysis of environmental consequences. This allows for a standardized comparison between alternatives based on the most relevant information. A brief rationale for the selection of each impact topic is given below.

## Impact Topics Selected For Detailed Analysis

**Archeological Resources.** Extensive archeological surveys of the Little Bighorn Battlefield National Monument were completed by Midwest Archeological Center (MWAC) in 1984, 1985, 1989, and 1994. Ten archeological sites have been identified within Little Bighorn Battlefield National Monument, and include nine prehistoric lithic scatter sites (located on the Custer Battlefield), and one archeological site pertaining to the historic Battle of the Little Bighorn that encompasses both the Custer and Reno-Benteen Battlefields. Archeological materials, including some human remains (associated with the original 1876-1881 Seventh Cavalry grave sites) from various Seventh Cavalry headstones, were identified, collected and analyzed. No Native American human remains or burial sites from Lakota Sioux and Cheyenne casualties from the battle are known to be located in Little Bighorn Battlefield National Monument, including the project area.

Because archeological resources are in close proximity to the road, archeological resources is addressed as an impact topic in this environmental assessment / assessment of effect.

**Historic Structures.** Many historic structures exist within Little Bighorn Battlefield National Monument. Within the project area, there are two historic structures identified on the park's List of Classified Structures (LCS): the white marble headstones (LCS #11522), which mark the approximate location for the burial sites of U.S. military soldiers, and the earthen fortifications at Reno-Benteen Battlefield (LCS #11523). Potential realignment of the Tour Road could impact the headstones, and reconfiguration of the Reno-Benteen parking lot could impact the earthen fortifications. Therefore, historic structures are addressed as an impact topic in this environmental assessment / assessment of effect.

**Ethnographic Resources.** American Indian tribes traditionally associated with Little Bighorn Battlefield National Monument and others with whom the monument staff regularly consult are concerned about ground disturbance at the monument and potential discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony. Therefore, ethnographic resources is addressed as an impact topic in this environmental assessment / assessment of effect.

**Visitor Experience.** The mission of Little Bighorn Battlefield National Monument is to provide visitors with an understanding of the historic events leading up to the battle, the encounter itself, and the consequences by both the military and American Indian contingents, for the enjoyment of future generations (NPS 2002a). Visitor experience at Little Bighorn Battlefield National Monument includes interpretation and educational experiences associated with the Battle of the Little Bighorn, access and circulation, and visitor safety while visiting the monument.

Because all alternatives would affect access on the only road within the monument, all alternatives would have the potential to affect visitor experiences at Little Bighorn Battlefield National Monument, so visitor experience is addressed as an impact topic in this environmental assessment / assessment of effect.

## Impact Topics Dismissed From Detailed Analysis

The following impact topics were analyzed and dismissed from further consideration because either there would be no impacts or the effects are minor or less with no controversy:

- **Cultural Landscapes** - The National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.); the National Environmental Policy Act of 1969 (42 USC 4321 et seq.); NPS Director's Order #28: *Cultural Resource Management Guideline* (NPS 1998), NPS *Management Policies 2001* (NPS 2000a), and NPS Director's Order #12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* and its accompanying handbook (NPS 2001a) require the consideration of impacts on cultural landscapes listed in or eligible for listing in the National Register of Historic Places (NRHP).

According to the NPS *Cultural Resource Management Guideline* (DO #28), a cultural landscape is defined as "a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined by both physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values and traditions" (NPS 1998).

There are three cultural landscapes within or adjacent to the project area; Last Stand Hill, Reno-Benteen Battlefield, and the National Cemetery. At Last Stand Hill and the

National Cemetery there would be no construction work outside of the existing road prism or curb. The construction work at the Reno-Benteen Battlefield under the proposed project would impact historic structures. The impact analysis to these historic structures is addressed in the “Environmental Consequences” section. However, the integrity of the cultural landscape associated with the Reno-Benteen Battlefield would not be affected. Therefore, cultural landscapes was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Indian Trust Resources** - Indian trust assets are owned by Native Americans but held in trust by the United States. Secretarial Order 3175 (“Identification, Conservation and Protection of Indian Trust Assets”) requires that any anticipated impacts to Indian trust resources due to a proposed project or action by agencies within the Department of the Interior be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. The lands within the monument boundaries are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Under federal common law purposes, the Tour Road may be treated as a public road with an easement width of 60 feet (FHWA 2004). The National Park Service maintains the existing 60-foot right-of-way (ROW). None of the alternatives would have an impact outside of that 60-foot ROW. Therefore, Indian trust resources were dismissed from detailed analysis in this environmental assessment / assessment of effect.
- **Threatened, Endangered, or Special Concern Species** - The Endangered Species Act (ESA) (16 USC 1531 et seq.), as amended, requires an examination of impacts on all federally-listed threatened or endangered species. NPS policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species (NPS 2000a).

According to the *Little Bighorn Battlefield National Monument Environmental Assessment Biological Report* prepared for this project, the whooping crane (federally endangered) and bald eagle (federally threatened) are the only federally-listed species known to occur within or near the project area (DEA 2004).

Only the nearby Little Bighorn River riparian area provides potential stopover or foraging habitat for the whooping crane, however, use of the area is unlikely due to the presence of Interstate 90 to the west and heavy use of areas to the east by tourists. The proposed project would not impact any incidental use of the Little Bighorn River riparian area by whooping cranes; therefore there would be no impact to whooping cranes or their habitat.

Bald eagles may fly over the project area, but they are unlikely to forage or remain in the immediate project area due to high disturbance factors from foot and automobile traffic within the monument. The USFWS delineates 0.5 miles as the area of concern for bald eagles nests. No suitable bald eagle nesting habitat exists within the project area, and no known bald eagle nest sites exist within 0.5 miles of the project area. Bald eagle nest surveys would continue until project completion. If a nest or activity area is identified within 0.5 miles of the project area, the monument would contact USFWS and limit any activities that could impact bald eagles until a Biological Assessment (BA) pursuant to section (7) of the ESA is prepared and consultation is complete (DEA 2004). Based on current conditions, there would be no impact to bald eagles or their habitat.

NPS policies direct parks to address impacts to state-listed species of concern and potential habitat for state-listed species (NPS 2000a). Several state-listed species of concern occur within the monument and may nest within and adjacent to the project area, including Swainson's hawk, burrowing owl, Brewer's sparrow, Columbian sharp-tailed grouse, grasshopper sparrow, lark bunting, and Long-billed curlew. If active nests are located within 0.5 miles of the project area seasonal restrictions on construction activities would be implemented to minimize / mitigate direct impacts to nests or individuals. Seed collection for revegetation efforts would be done by hand to avoid destroying ground nesting bird species. With implementation of NPS recommended mitigation, the short-term impacts on state-listed species of concern from human-related disturbance under the action alternatives would be adverse site-specific negligible, lasting only during the construction period.

Long-term impacts to state-listed species of concern from construction of the action alternatives would include habitat disturbance through the loss of vegetation. Long-term impacts to state-listed species of concern from construction of the action alternatives would be approximately 3.0-5.0 acres of habitat disturbance. The majority of construction would occur in previously disturbed areas, such as parking areas, roads, road shoulders, and construction zones disturbed when these features were originally constructed. The removal of vegetation in these areas would result in a negligible loss in the amount of habitat in the project area. If any construction activities would result in the taking of any migratory birds or nests, a Migratory Bird Permit from the U.S. Fish and Wildlife Service would be required. Because only a small amount of habitat would be affected by the proposed action, long-term impacts to state-listed species of concern from habitat disturbance would be adverse site-specific negligible.

A population of horned lizard occurs at Weir Point in the study area according to park personnel. This is the only known population of this species in the park and should be protected during construction. All construction related activities, including revegetation, at the cut slope bank would be avoided, if practicable, to minimize impacting the species and its habitat. If the cut slope bank cannot be avoided, the area of impact would be minimized to the greatest extent feasible in order to preserve the remainder of the habitat area in an undisturbed state. If revegetation is required, revegetation activities would be conducted in spring or fall during the wet season to minimize impacts during breeding season. With implementation of NPS recommended mitigation, the short-term impacts on horned lizard from human-related disturbance under the action alternatives would be adverse site-specific negligible, lasting only during the construction period. With implementation of NPS recommended mitigation, long-term impacts to horned lizard from habitat disturbance would be adverse site-specific negligible.

Therefore, threatened, endangered species, and special concern species were dismissed from detailed analysis in this environmental assessment / assessment of effect. This environmental assessment / assessment of effect would be submitted to the U.S. Fish and Wildlife Service, for review and comment.

- ***Designated Critical Habitat, Ecologically Critical Areas, Wild and Scenic Rivers, Other Unique Natural Areas*** - The grassland within Little Bighorn Battlefield National Monument has been designated as a pristine Unique Natural Area. It has been designated as such because of the intact native plant community representative of the Northern Mixed Grass Prairie of southeastern Montana and the exclusion from grazing.

Due to this designation, it is imperative that the genetic integrity of the native species be preserved and protected. Therefore, the seed and plants used to revegetate the areas disturbed by the proposed road construction would be indigenous to the monument. This would be accomplished by hand collection of seed of selected species within the park boundaries. The collected seed would be propagated and increased to a sufficient quantity by a Natural Resources Conservation Service (NRCS) Plant Materials Center (PMC) and returned to the park for establishment after completion of construction.

Some exotic and other invasive species occur along the existing road corridor. This is especially prevalent on the road shoulders of the area disturbed by the construction activities of the previous road project. An intense preconstruction control program, consisting of timely herbicide applications, would be initiated in the fall of 2005 and continued through 2006. For two years post construction, the revegetated areas would be monitored. Re-occurring invasive species and noxious weeds would be eradicated by herbicide treatments and/or manual pulling. With these protective measure in place, this project would have a beneficial negligible long-term impact because it would improve the existing condition by eradicating invasive species that may degrade the pristine nature of the grassland. Therefore, this impact topic was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Wildlife** - National Park Service *Management Policies 2001* require the protection of the components and processes of naturally occurring biotic communities, including the natural abundance, diversity, and ecological integrity of plants and animals (NPS 2000a). NEPA requires federal agencies to use all practicable means to restore and enhance the quality of the human environment and to avoid or minimize any possible adverse impacts of their actions on the environment.

Wildlife commonly found at Little Bighorn Battlefield National Monument include common species of rodents (mice, woodrats, voles, ground squirrels, etc.), coyote, mule deer, badger, pronghorn antelope, songbirds (western kingbird, American goldfinch, European starling, etc.), and amphibians and reptiles (tiger salamander, racer, gopher snake, rattlesnake, horned lizard, etc.). According to USFWS, there are no fish present in the three intermittent tributaries that cross the Tour Road via culverts (DEA 2004).

There would be both short- and long-term displacement of wildlife under the action alternatives. Short-term adverse negligible construction impacts would include displacement of wildlife from human-related noise and visual disturbance caused by construction activities. Seed collection for revegetation efforts would be done by hand to avoid destroying ground nesting bird species.

Long-term impacts to wildlife from construction of the action alternatives would be approximately 3.0-5.0 acres of habitat disturbance through loss of vegetation. The majority of construction would occur in previously disturbed areas, such as parking areas, roads, road shoulders, and construction zones disturbed when these features were originally constructed. The removal of vegetation in these areas would result in a negligible loss in the amount of habitat in the project area.

Any wildlife present in the area has unquestionably been long habituated to human activity, noise, and traffic. Wildlife would probably avoid the construction zone to a certain extent during construction. Some small animals could be killed or forced to temporarily relocate outside the project area; larger animals would probably avoid the site altogether. If any construction activities would result in the taking of any migratory

birds or nests, a Migratory Bird Permit from the U.S. Fish and Wildlife Service would be required.

Short-term impacts on wildlife from human-related disturbance under the action alternatives would be adverse site-specific negligible, lasting only during the construction period. Because only a small amount of habitat would be affected by the proposed action, long-term impacts to wildlife from habitat disturbance would be adverse site-specific negligible. Therefore, wildlife was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Vegetation** - *NPS Management Policies 2001* require the protection of the components and processes of naturally occurring biotic communities, including the natural abundance, diversity, and ecological integrity of vegetation (NPS 2000a). NEPA requires federal agencies to use all practicable means to restore and enhance the quality of the human environment and to avoid or minimize any possible adverse impacts of their actions on the environment.

Because the Custer Battlefield sector has been fenced since 1891, it is one of the most pristine prairie grasslands in the region. Sagebrush and Yucca is a dominant vegetation cover of the area; however, due to recent fires in 1983, 1991, 1994, and 1995, these species have temporarily, become less dominant.

Blue bunch wheatgrass, Idaho fescue, Western wheatgrass, Buffalo grass, Green needle grass, Blue grama, and other main grasses. Much of the disturbance to vegetation and soil are from the battle and subsequent burials as well as post battle visitation to the area. Disturbed areas are evidenced by the invasion of yellow clover, Japanese brome, common salsify, prairie milk vetch, and broom snakeweed.

There would be both short- and long-term impacts to vegetation under the action alternatives. Short-term adverse negligible impacts would include disturbance of vegetation from construction activities. Once construction was complete, disturbed sites within the construction area would be returned to natural conditions, and the site topography would be returned to its preconstruction contours as much as possible. Ground surface treatment would include grading to natural contours, as well as, roughing / scarification and mulching to promote natural seeding. Areas disturbed by construction would be revegetated according to NPS standards and in coordination with the park staff to facilitate soil stability, help reduce runoff, channelization, and erosion, and to help the soil restore itself to natural conditions. The seed and plants used to revegetate the areas disturbed by the proposed road construction would be indigenous to the monument. This would be accomplished by hand collection of seed of selected species within the park boundaries. The collected seed would be propagated and increased to a sufficient quantity by a NRCS Plant Materials Center and returned to the park for establishment after completion of construction.

To prevent the introduction of, and minimize the spread of non-native vegetation and noxious weeds, mitigation measures and best management practices would be implemented. Through the use of best management practices and mitigation measures, short-term impacts to vegetation from habitat disturbance would be adverse site-specific negligible. An intense preconstruction control program, consisting of timely herbicide applications, would be initiated in the fall of 2005 and continued through 2006. For two years post construction, the revegetated areas would be monitored. Re-occurring invasive species and noxious weeds would be eradicated by herbicide treatments and/or manual pulling.

Long-term impacts to vegetation under the action alternatives would be approximately 3.0-5.0 acres of previously undisturbed vegetation. However, removal of vegetation would not adversely affect the viability or relative abundance of any vegetation species. There would be no changes in the current status of vegetative communities, either in terms of species composition or population dynamics, other than those brought about by natural environmental processes. In addition, one deciduous tree with a diameter at breast height (dbh) measurement of 12 inches would be removed from the median between the visitor center parking area and the travel lane. The long-term impacts to the vegetative communities are adverse negligible. Therefore, vegetation was dismissed from detailed analysis in this environmental assessment / assessment of affect.

- **Geology and Soils** - NPS *Management Policies 2001* require the protection of significant geologic and topographic features. In addition, the National Park Service would strive to understand and preserve the soil resources of park units and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources (NPS 2000a).

Elevations at Little Bighorn Battlefield National Monument range from 3,200 to 3,400 feet. The low sloping terrain is characteristic of the sedimentary plains of southeastern Montana Soils. The U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Big Horn County Area, Soil Survey identifies six soil types adjacent to the project area. Most of the project area is surrounded by hilly to rolling clay loams and silty clay loams. The west side of the southern portion of the project area is characterized by a steep shale outcropping. The area adjacent to Medicine Tail Coulee, which cuts through the middle of the project area in an east-west direction, is identified as frequently flooded (USDA 2005).

The NRCS has evaluated the erosion potential of different soil types and categorized them as being slight, moderate, or severe. The majority of the study area, including the location of the Reno-Benteen parking areas, is designated as having a severe potential for erosion by the NRCS. Areas of moderate erosion potential include the visitor center. Within the project area, the only area identified as having a slight potential for erosion is the land adjacent to Medicine Tail Coulee.

There would be both short-and long-term impacts to soils under either action alternative. Short-term impacts to soils would include temporary disturbance of previously undisturbed soils from construction activities. Once construction was complete, disturbed sites within the construction area would be returned to natural conditions, and the site topography would be returned to its preconstruction contours as much as possible. Areas disturbed by construction would be revegetated to facilitate soil stability, help reduce runoff, channelization, and erosion, and to help the soil restore itself to natural conditions. Through the use of best management practices and mitigation measures, short-term impacts to soils from disturbance would be adverse site-specific negligible.

Long-term impacts to soils would be adverse site-specific negligible from the loss of soils due to construction. The loss of soils would be negligible when compared to the availability of soils within the resource area. Overall, the action alternatives would have no impact on geologic resources, and would result in adverse site-specific negligible short-and long-term impacts on soil resources within the project area. Therefore, the topic of geology and soils was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Air Quality** - The 1963 Clean Air Act, as amended (42 *United States Code* (USC 7401 et seq.), requires that federal land managers have a responsibility to protect air quality-related values from adverse air pollution impacts. Section 118 of the Clean Air Act requires parks to meet all federal, state, and local air pollution standards. Section 176(c) of the Clean Air Act requires all federal activities and projects to conform to state air quality implementation plans to attain and maintain national air quality standards. NPS *Management Policies 2001* addresses the need to analyze potential impacts to air quality during park planning (NPS 2000a).

Little Bighorn Battlefield National Monument consists of approximately 765 acres (less than the 6,000 acres required for Class I designation); therefore, the monument is not classified as a Class I area under the Clean Air Act (NPS 2004b).

Under either action alternative, local air quality would be temporarily affected by dust and construction vehicle emissions. Fugitive dust from construction equipment would intermittently increase airborne particulate in the area near the project site, but loading rates are expected to be low. Fugitive dust would be controlled by periodic watering as necessary. Operation of construction equipment would result in increased vehicle exhaust and emissions. Emissions of hydrocarbons, nitrous oxides, and sulfur dioxides would dissipate rapidly since air stagnation is rare within the project area. Construction equipment would not be allowed to idle for extended periods of time.

There would be no long-term impacts to air quality under the action alternatives. The road and parking area improvements would not result in a measurable increase in air contaminants. Through the use of mitigation measures, impacts on local air quality would be adverse localized negligible short term; occurring only during the construction period. Therefore, air quality was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Soundscapes** - In accordance with NPS *Management Policies 2001* (NPS 2000a) and *Directors Order #47: Sound Preservation and Noise Management* (NPS 2000b), an important part of the NPS mission is the preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity of transmitting natural sounds. The frequency, magnitude, and duration of human-caused sound considered acceptable varies among national park system units, as well as throughout each park unit (human-caused sounds being generally more acceptable in developed areas and less so in undeveloped areas).

Impacts to soundscapes from noise associated with construction equipment and activities under either action alternative would be adverse localized negligible short term. Construction activities would be scheduled so as to minimize adverse effects on visitor experiences. The proposed project would not increase vehicle traffic, including large RV's already visiting park; however, since there would be additional parking spaces, there would be more vehicle motors starting (or idling) and therefore vehicle noise levels may increase slightly at the parking lots for the action alternatives during the peak visitor periods. For both action alternatives, this long-term impact would be adverse site-specific negligible; therefore, soundscapes was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Visual Resources** - Visual resource analysis includes assessing the potential impacts to scenic viewscapes associated with the monument. Specific visual resources associated

with the cultural landscapes of Little Bighorn Battlefield National Monument in the project area are discussed under cultural landscapes in this document. Both short- and long-term impacts to visual resources would occur. There would be adverse site-specific negligible short-term impacts during construction from construction-related activities within the areas of construction and to areas close to construction; however, the effects would last only as long as construction. Construction activities and construction vehicles would be limited to the roadway and parking areas only; construction activities would not occur within the battlefield.

Adverse localized negligible to minor long-term impacts would occur to visual resources from expanding the visitor center and Reno-Benteen parking areas, depending on the number of vehicles parked at one time; however, the impacts would not diminish the viewscape integrity or values. Under the action alternatives, the short- and long-term impacts to visual resources would be associated with the Tour Road and visitor center and Reno-Benteen parking areas, where vehicles currently travel. Therefore, visual resources was dismissed from detailed analysis in this environmental assessment /assessment of effect.

- **Water Quality and Hydrology** - The 1972 Federal Pollution Control Act, as amended by the Clean Water Act of 1977, is a national policy to restore and maintain the chemical, physical, and biological integrity of the Nation's waters and to enhance the quality of water resources and to prevent, control, and abate water pollution. *NPS Management Policies 2001* provides direction for the preservation, use, and quality of water originating, flowing through, or adjacent to park boundaries (NPS 2000a). The National Park Service seeks to restore, maintain, and enhance the quality of all surface and ground waters within the parks consistent with the 1972 Federal Water Pollution Control Act, as amended, and other applicable federal, state, and local laws and regulations.

The proposed project crosses three intermittent tributaries (unnamed stream, Deep Coulee, and Medicine Tail Coulee) to the Little Bighorn River via culverts. Under the action alternatives, concrete box extensions and new wingwalls would be constructed on culverts at Deep Coulee and Medicine Tail Coulee. Work on these culverts would be done when water is not flowing in the coulee. The proposed project would have no long-term effect on water quality; however, there would be short-term impacts to water quality during construction. Construction activities associated with the proposed project could potentially contribute sediments in coulees and other drainages that may be located in the project area.

Sediment traps, silt fencing, erosion checks, and / or filters would be constructed preceding or following all coulees and in all other drainages (if required) before the water (runoff) leaves the project construction limits. Best management practices would be applied, thus diminishing any impact to hydrologic features. The action alternatives would result in adverse localized negligible short-term impacts to water quality from construction activities during runoff conditions. Therefore, water quality was dismissed from detailed analysis in this environmental assessment / assessment of affect.

- **Floodplains and Wetlands** - Executive Orders 11988 ("Floodplain Management") and 11990 ("Protection of Wetlands") require an examination of impacts to floodplains and wetlands; of potential risk involved in placing facilities within floodplains, and protecting wetlands. *NPS Management Policies 2001, Director's Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making*,

*Director's Order #77-2: Floodplain Management/Procedural Manual*, and *Director's Order #77-1: Wetland Protection/Wetland Procedural Manual* provide guidelines on developments proposed in floodplains and wetlands.

There are no Flood Insurance Rate Maps (FIRM) for the Crow Indian Reservation (including land surrounding the monument). According to Big Horn County, the FIRM completed for the remaining portions of Big Horn County (lands other than Crow Indian Reservation land) were based largely in part on the 1978 flood (100 year "plus" flood). Photos taken of the Little Bighorn River during the 1978 flood event show the flood area located several hundred feet in elevation below the monument and several thousand feet horizontally to the south of the monument (BHC 2005). In addition, the Tour Road crosses three intermittent tributaries (unnamed stream, Deep Coulee, and Medicine Tail Coulee) to the Little Bighorn River, and has never in the history of the national monument been flooded by the Little Bighorn River or its tributaries.

Under the action alternatives, concrete box culverts at Deep Coulee and Medicine Tail would be extended four feet on both sides of the roadway with new wingwalls. This maintenance and safety improvement would allow for the repair of the deteriorating concrete at the existing wingwalls and provide additional width and flatten the slopes over the culvert to improve safety by increasing the clear zone so that guardrail is not needed. The proposed repair work at these culverts would not change the floodplains associated with these tributaries, or the Little Bighorn River floodplain. Changes in the ability to convey floodwaters from the culverts, or its values and functions, would be barely measurable and local. The proposed project would not contribute to flooding of these areas during flood events; impacts to floodplains would be anticipated to be adverse site-specific negligible and long term in duration due to flooding events (including flash floods) associated with these water-bodies. Because there are no regulatory floodplains in the project area and the addition of the culvert extensions would not result in noticeable impacts on floodplain values, a floodplains Statement of Findings (SOF) would not be required for this project.

Under NPS standards, *Director's Order #77-1: Wetland Protection/Wetland Procedural Manual* (NPS 2002b), the edges of these intermittent tributaries (unnamed stream, Deep Coulee, and Medicine Tail Coulee) would likely be considered wetlands. As discussed under floodplains, the proposed project crosses the three intermittent tributaries via concrete box culverts. For the analysis of the proposed project's impacts to wetlands, the impact area under all of the alternatives was considered to be a wetland. Under the action alternatives, there would be both short- and long-term impacts to wetlands at Deep Coulee and Medicine Tail Coulee from repairing and extending the concrete box culverts for maintenance and safety improvements.

The two-wetland areas would be subject to adverse site-specific negligible short-term impacts, lasting only as long as construction, from improvements to the Tour Road and culverts at Deep Coulee and Medicine Tail Coulee. Short-term impacts would include sedimentation from erosion of exposed surfaces and habitat disturbance from construction operations. These impacts would vary depending on the timing of construction and amount of water available in the tributaries.

Long-term impacts to wetlands under the action alternatives would include disturbance at Deep Coulee and Medicine Tail Coulee from replacing the wingwalls and extending the culverts. The area of temporary disturbance during construction would be less than

0.1 acre; however, the permanent area of disturbance following completion of construction would be less than the temporary disturbance. The effects to wetlands from implementation of the action alternatives would be relatively small in terms of the overall wetland area; affecting a limited number of individuals of plant or wildlife species in the wetland area. Long-term impacts to wetlands would be adverse site-specific negligible.

Mitigation measures including best management practices (BMPs) would be implemented to minimize adverse short- and long-term impacts to wetlands, including erosion and sediment control. To minimize short-term impacts, work on the Deep Coulee and Medicine Tail Coulee culverts would be done when the water is not flowing in the coulee. Additional mitigation could include active restoration (revegetation), excavation to original wetland soil, and invasive species control. Appropriate mitigation measures would be implemented, and “conditions” would be met for actions to qualify as “excepted action” according to NPS *Director’s Order #77-1: Wetland Procedural Manual: Wetland Protection Appendix 2* (NPS 2002b). Therefore, a wetland SOF would not be required for this project.

Maintenance, repair, or renovation of currently serviceable facilities or structures is an “excepted action” to the SOF process: NPS *Director’s Order #77-1: Wetland Procedural Manual 4.2.A.1* “Actions that may be excepted from the Statement of Findings” (Section 5.3D and 5.3E) and compensation (Section 5.2C) requirements: section “f” states that exceptions include “maintenance, repair, or renovation (but not full reconstruction or expansion) of currently serviceable facilities or structures....” (NPS 2002b). This exception allows for “minor” (total of 0.1 acre or less) deviations in the structure’s configuration or fill footprint due to subsequent codes or safety standards. Because the adverse impact on wetlands from the proposed safety improvements at the culverts total less than 0.1 acre and the conditions stated in NPS *Director’s Order #77-1: Wetland Procedural Manual: Wetland Protection Appendix 2* would be met, the proposed action may be excepted and wetland compensation would not be required.

Therefore, floodplains and wetlands were dismissed from detailed analysis in this environmental assessment / assessment of effect and no SOF would be prepared for floodplains or wetlands.

- **Wilderness Values** - The Wilderness Act of 1964 (16 USC 1131 et seq.) established a national wilderness preservation system composed of federally owned areas designated by Congress and administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness. No areas within or adjacent to the monument are designated wilderness areas. No wilderness values would be impacted from this project; therefore, wilderness values was dismissed from detailed analysis in this environmental assessment / assessment of effect.
- **Prime and Unique Farmlands** - In August 1980, the Council on Environmental Quality (CEQ) directed that federal agencies assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) as prime or unique (CEQ 1980). Under the Farmland Protection Policy Act (FPPA) (7 USC 4201), prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion (7 USC 4201(c)(1)(A)). Unique farmland is land other than prime farmland that is used for the

production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, fruits, and vegetables (7 USC 4201(c)(1)(B)).

The existing Tour Road alignment traverses three areas designated as farmland of statewide importance as well as two areas designated as prime farmland if irrigated. The soil characteristics in the vicinity of the visitor center are consistent with farmland of statewide importance; however, the uses in the developed area may preclude it from this designation. The Reno-Benteen parking area is not adjacent to any areas of designated important farmland. The action alternatives would not impact any farmland of statewide importance or prime farmland if irrigated, because the proposed rehabilitation project would stay within the road prism and 60 foot right-of-way. Therefore, prime and unique farmlands was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- ***Socioeconomic Environment*** - The alternatives considered would not change local and regional land use or impact local businesses or other agencies in the long term. However, either action alternative would provide a beneficial negligible short-term impact to the local economies of nearby Crow Agency (e.g. minimal increases in employment opportunities for the construction workforce and revenues for local businesses and government generated from construction activities and workers).

One concessioner, Apsalooke Tours, runs private tours in the monument during the summer season. No other concessioners operate within the monument. Between November 1 and April 1 the entire Tour Road could be closed for up to four weeks due to construction; however, the visitors could access the visitor center parking area and walk to the Indian Memorial and Last Stand Hill. In addition, between October 1 and April 30, the road could be closed during construction operations from Calhoun Loop to the terminus of the road at Reno Benteen. This same segment beyond Calhoun Loop could be closed Monday through Thursday between May 1 and Memorial Day weekend and Labor Day Weekend and September 30. The proposed action would have adverse localized minor short-term impacts to the concessioner during construction when portions of the Tour Road are closed to traffic during the summer; however, construction-related traffic delays would be minimized as much as possible. There would be no long-term adverse or beneficial impact for any alternative. Therefore, impacts on the socioeconomic environment was dismissed from detailed analysis in this environmental assessment / assessment of effect.

- ***Land Use Plans and Policies*** - Little Bighorn Battlefield National Monument consists of approximately 756 acres located in two parcels, and is surrounded by Crow Tribe reservation. The northern parcel is the Custer Battlefield and the southern parcel is the Reno-Benteen Battlefield. The Tour Road connects the two battlefields by traversing Crow Tribe reservation lands and three private landholder's lands, which separate the two battlefields. Most of the land on the east bank of the Little Bighorn River between the two battlefields is for livestock grazing (NPS 1999a). Under the action alternatives, all proposed work would occur within existing right-of-way easements, so there would be no change to current land use.

Land use policies provide direction for future land use decisions. There would be no change to land use policies under the proposed project. Under the action alternatives, land use and land use policies would not be impacted or changed; therefore, land use plans and policies were dismissed from detailed analysis in this environmental assessment / assessment of effect.

- **Land Ownership / Right-of-Way** – The right-of-way for the Tour Road was granted by the Superintendent of the Crow Agency on June 28, 1938. Under federal common law purposes, the Tour Road may be treated as a public road with an easement width of 60 feet (FHWA 2004). The National Park Service maintains the existing 60-foot right-of-way (ROW). Under all alternatives there would be no impact outside of that 60-foot ROW and no change in land ownership. Therefore, land ownership / right-of-way was dismissed from detailed analysis in this environmental assessment / assessment of effect.
- **Environmental Justice** - According to the Council on Environmental Quality, environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies (CEQ 1997). Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Executive Order 12898 (“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”) requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The project is located within the Crow Indian reservation; however, no houses, businesses or use of property would be impacted under the proposed project. The action alternatives would not have disproportionate health or environmental effects on minorities or low-income populations or communities as defined by the Environmental Protection Agency (EPA) because they would not impact any houses, businesses or use of property (EPA 1998). Therefore, environmental justice was dismissed from detailed analysis in this environmental assessment / assessment of effect.

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# ALTERNATIVES

## INTRODUCTION

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Alternatives for this project were developed to address the purpose of the project: improve poor pavement and shoulder conditions and structural deficiencies; provide a uniform width to the road in order to improve visitor experience and safety, and reduce resource damage; and increase parking capacity at the visitor center and Reno-Benteen parking areas in order to improve visitor experience and traffic flow in these areas.

Alternative A, the No - Action Alternative describes the action of continuing the present management operations. This alternative provides a basis for comparing the management direction and environmental consequences of the action alternatives. If the No - Action Alternative was selected, the National Park Service would respond to future needs and conditions associated with the Tour Road without substantial actions or policy changes.

Alternative B - Road Widening - 24' Width (NPS Preferred Alternative), presents the NPS proposed action and defines the rationale for the action in terms of structural and safety improvements, resource protection and management, visitor experience, costs, and other applicable factors.

Alternative C - Road Widening - 22' Width, was also evaluated and is presented in this chapter.

## ALTERNATIVE A: NO - ACTION ALTERNATIVE

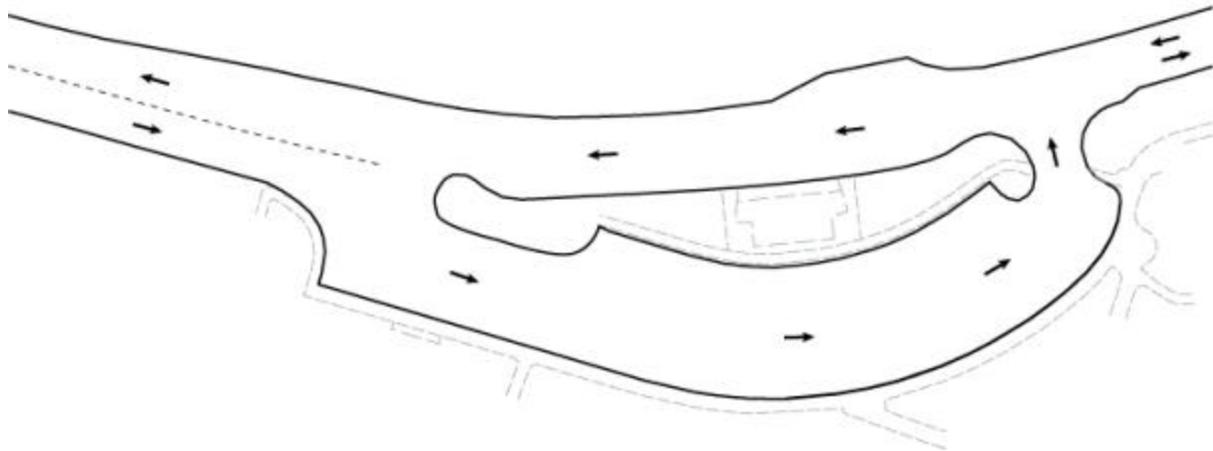
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The No - Action Alternative would continue to use the current Tour Road alignment and configuration with continuing maintenance of the roadway by Little Bighorn Battlefield National Monument. There would be no change in roadway under this alternative. The paved width of the travel lanes would vary in width from approximately 17-20 feet, with no shoulder. Rutting of the road surface due to heavy vehicle loads would continue, and the current practice of patching the rutting areas with asphalt would continue. The current posted speed of 25 to 35 mph/40 to 56 kph would remain. Currently, vehicles typically travel the Tour Road more slowly than the posted speed due to monument sightseeing and the narrow width of the existing roadway.

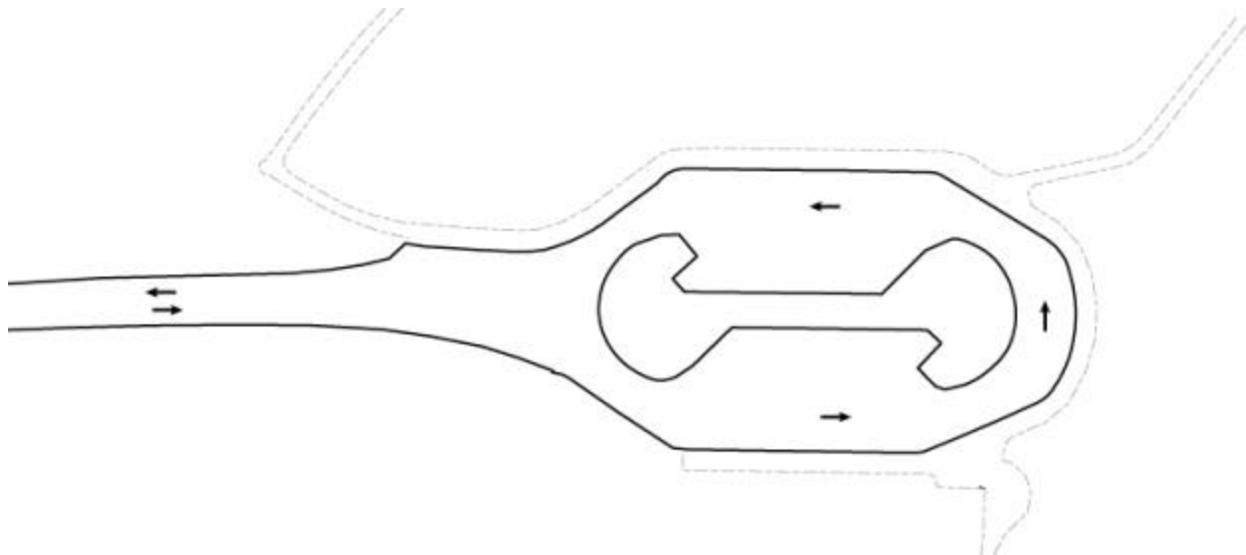
The visitor center parking area would not be expanded or improved. Eastbound traffic traveling from the monument entrance to the Tour Road would still be required to drive through the visitor center parking lot to reach the Tour Road, creating congestion and conflicts with vehicles trying to park in the lot. Parking capacity, particularly for recreational vehicles (RVs) and buses, would still be insufficient. Buses would continue to create congestion when loading and unloading near the visitor center. The Reno-Benteen parking area would not be expanded or improved. Vehicle congestion at parking area / turnaround would continue to result in visitor confusion and frustration. Recreational vehicles would also continue to drive over the center median and / or outside curb. See Figure 2 and Figure 3 for existing visitor center and Reno-Benteen parking area layouts.

This alternative does not preclude short-term minor repair or improvement activities for the road that would be part of routine maintenance for continuing operation of the road. The current Tour Road does not meet the NPS Road Standards for a Class 1 Principal Park Road. Because the No - Action Alternative does not meet the purpose and need, it is not carried forward as the preferred

**Figure 2. Alternative A Visitor Center Parking Area Layout**



**Figure 3. Alternative A Reno-Benteen Parking Area Layout**



alternative but is rather used to provide a baseline comparison for the action alternatives and in accordance with NEPA regulations [40 CFR 1502.14(d)].

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**ALTERNATIVE B: ROAD WIDENING - 24' WIDTH (NPS PREFERRED ALTERNATIVE)**

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**Tour Road Rehabilitation**

The project would begin in the Custer Battlefield at Station (Sta.) 5+600 and extend southeast to the Reno-Benteen Battlefield turnaround, approximately 5.1 miles, Sta 13+380. (Stations are the survey points along the Tour Road that are utilized in the 30 percent complete design drawings for the proposed project) This alternative would have a 24-foot top width consisting of 11-foot travel lanes and 1-foot shoulders. This alternative meets the 1984 Park Road Standards for 11-foot travel lanes.

At Medicine Tail and Deep Coulees the concrete non-historic culverts would be extended approximately eight feet with new wingwalls to accommodate the wider road width. No other retaining wall or guard wall would be added to the structure. The design and posted speed of this alternative would be 30 mph/50 kph.

## Parking Area Modifications

The visitor center and Reno-Benteen parking lots would be reconstructed to provide increased parking capacity and improved traffic flow through the parking lots.

**Visitor Center.** Proposed improvements to the visitor center parking lot would increase parking capacity for oversized vehicles and standard-size vehicles, would improve traffic flow and parking conditions in the area, and would reduce traffic congestion caused by conflicts among through traffic, parking vehicles, buses, and recreational vehicles (RVs). One non-native tree that is not contributing to the cemetery's cultural landscape, and has a diameter at breast height (dbh) measurement of 12 inches would be removed. The tree is north of the comfort station in the island between the parking lot and the tour road.

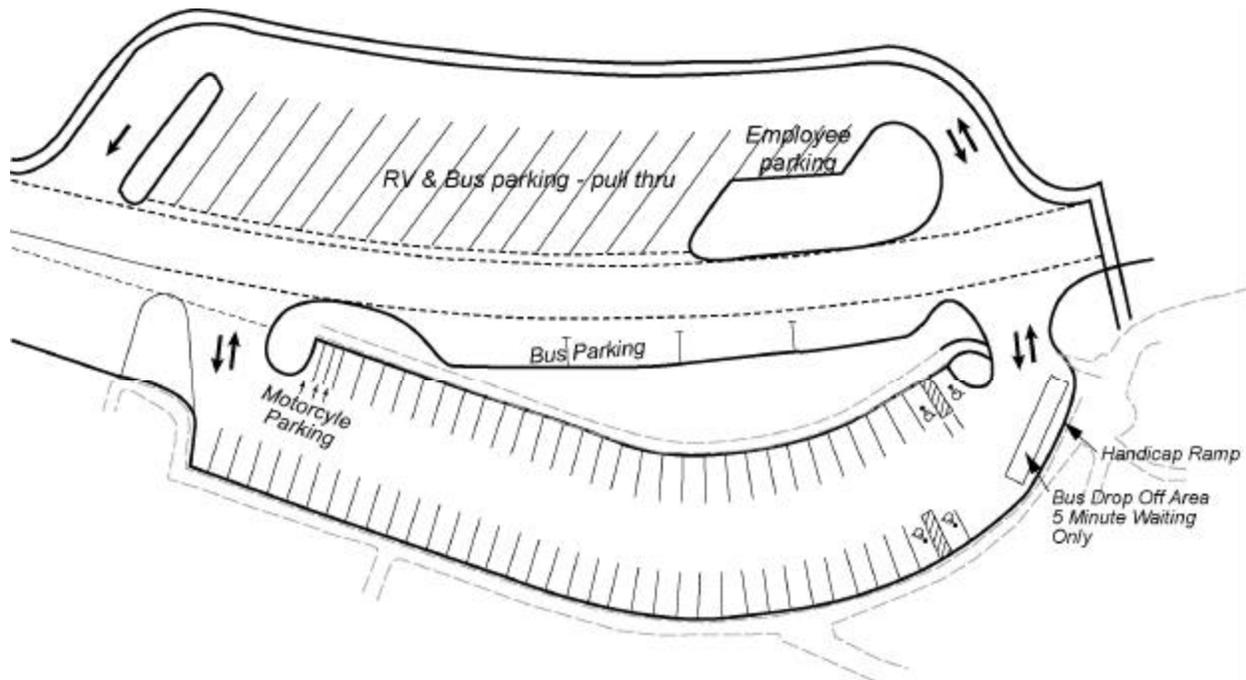
The visitor center parking lot would be expanded north beyond its existing footprint in order to provide a pull-through RV and bus parking area and a dedicated road for both east- and westbound traffic north of the existing parking lot (see Figure 4). Currently, eastbound traffic must travel through the parking lot itself to reach the Tour Road. With the consolidation of eastbound and westbound traffic onto one road north of the existing parking lot, the existing parking access aisle in the lot would be converted from its current shared use as an access aisle and through travel lane to exclusive use as a parking access aisle.

The existing lot would be reconstructed to provide an increase in parking spaces for standard-size vehicles (including handicapped parking spaces and designated for employee parking only), and designated parking spaces for motorcycles. A dedicated bus drop-off space would be provided in the lot at the entrance to the visitor center, allowing buses to load and unload without having to stop in the travel lane.

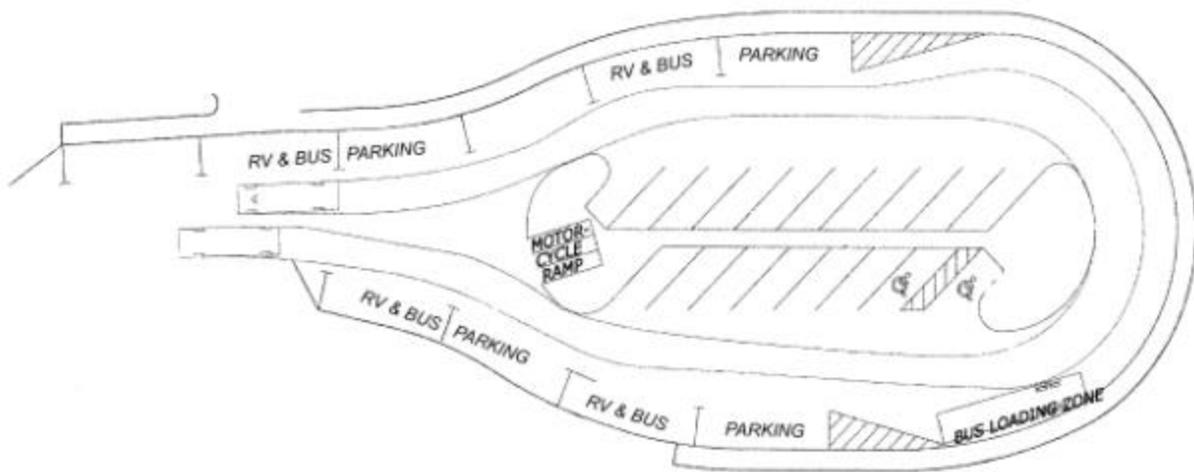
Parallel parking spaces designated for buses would be constructed on the south side of the road and designated pull-through RV and bus parking spaces would be constructed north of the road in the expanded area. Oversized vehicles would be able to enter and exit the pull-through parking spaces easily rather than trying to parallel park adjacent to a busy travel lane.

**Reno-Benteen.** The Reno-Benteen parking lot functions as both a parking lot and a turnaround for vehicles at the end of the tour road. Currently, there are two RV oversized vehicle-parking spaces in the lot, and the travel lane through the parking lot does not accommodate turning movements of oversized vehicles. Proposed improvements under this alternative would be to expand the lot beyond its existing footprint to provide additional parking spaces for RVs, buses and passenger vehicles, and a wider turn radius for oversized vehicles. The primary area of expansion would be west of the existing lot footprint; expanding into this area would involve construction of fill slopes and would create less disturbance to sensitive cultural resources than expansion to the east, where cut slopes would be required (see Figure 5).

**Figure 4. Alternative B and C Visitor Center Parking Area Proposed Layout**



**Figure 5. Alternative B and C Reno - Benteen Parking Area Proposed Layout**



The parking lot would be reconstructed to provide the same number of designated parking spaces for standard-size vehicles (including handicapped spaces); and would include designated parking spaces for motorcycles. However, the parking area would be reconstructed to accommodate an increase in the number of designated parking spaces for RVs and buses. A bus-loading zone would also be provided to allow tour buses to load and unload without stopping traffic in the parking lot. The standard-size vehicle parking spaces would be arranged around a center median in the lot, and the RV and bus parking spaces would be parallel parking spaces on each side of the road near the entrance to the lot.

## **Roadway Design**

Improvements to the Tour Road would include repairing structural deficiencies in the existing road base and resurfacing. The new pavement structure would be designed for a 20-year life. The existing asphalt pavement would be pulverized and recycled for use in the new roadway surface. Roadway areas with poor subgrade soils would be excavated and replaced with suitable material. The areas being widened would require excavation of cut slopes and / or addition of embankment fill. A standard foreslope ratio of 1:3 would be the design standard. This slope design minimizes the footprint of the construction area while still providing a traversable slope for errant vehicles. Roadway shoulders would be constructed with existing and imported material.

## **Staging Area**

The contractor's staging area would be located in existing parking lots or pullout areas or outside the monument.

## **Sustainability**

The National Park Service has adopted the concept of sustainable design as a guiding principle of facility planning and development. The objectives of sustainability are to design park facilities to minimize adverse effects on natural and cultural values, to reflect their environmental setting, and to maintain and encourage biodiversity; to construct and retrofit facilities using energy-efficient materials and construction techniques; to operate and maintain facilities to promote their sustainability; and to illustrate and promote conservation principles and practices through sustainable design and ecologically sensitive use. Essentially, sustainability is living within the environment with the least impact on the environment. Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) subscribes to and supports the practice of sustainable planning, design, and use of Little Bighorn Battlefield National Monument.

## **ALTERNATIVE C: ROAD WIDENING - 22' WIDTH**

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### **Tour Road Rehabilitation**

The project would begin in the Custer Battlefield at Sta. 5+600 and extend southeast to the Reno-Benteen Battlefield turnaround, approximately 5.1 miles, Sta. 13+380. This alternative would have a 22-foot top width consisting of 10-foot travel lanes and 1-foot shoulders. Although this cross-section does not meet the recommendations of the National Park Road Standards for travel lanes, the potential impacts to historical features, along with the low speed of the route and negligible accident history, warranted an analysis of a more modest road width proposed in this alternative. The design and posted speed of this alternative would be 30 mph/50 kph.

### **Parking Area Modifications**

Reconstruction of the visitor center and Reno-Benteen parking lots would be identical to that described under Alternative B. Refer to Figure 4 and Figure 5 for the proposed parking area layouts.

## Roadway Design

Under Alternative C, the roadway would be constructed as outlined under Alternative B.

## Staging Area

The contractor's staging area would be located as identified in Alternative B.

## MITIGATING MEASURES FOR THE PREFERRED ALTERNATIVE

The following measures in Table 1 are recommended to mitigate the adverse effects of the preferred alternative. In most construction areas soils and vegetation are already impacted to a degree by various human and natural activities. The proposed project would take advantage of these previously disturbed areas wherever possible. Final construction methods would be addressed during development of final construction plans. The sequencing of construction packages and time frame would also be addressed during development of the final design plans. Such plans would be dependent on minimizing impacts from the proposed project, critical path analysis for construction material staging, available funding and coordination with local communities.

**Table 1. Mitigation Measures**

Resource Area	Mitigation Measure
<b>General Considerations</b>	Before the beginning of construction, construction limits to identify and limit the area of construction activity would be surveyed and staked and could be marked with construction fencing, tape, flagging, snow fencing, or some similar material, as necessary. The contractor would be responsible for ensuring that all work stayed inside the construction limits. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the construction limits. This does not exclude necessary temporary structures, such as erosion control fencing.
	The Federal Highway Administration's project engineer would ensure that the project remained confined within the parameters established in the compliance documents and that mitigation measures were properly implemented.
	Construction equipment staging would occur within the roadway for active work areas or at designated pullouts. Construction-related offices or laboratories would be located outside monument boundaries.
	All material source / waste areas would be located outside of the monument. All demolition debris, including visible concrete and metal pieces, would be immediately hauled from the monument to an appropriate disposal location. All tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project work limits upon project completion. Any asphalt surfaces damaged due to work on the project would be repaired to original condition.
	The contractor would be required to maintain strict garbage control so that scavengers (e.g., corvids) would not be attracted to the project area. No food scraps would be discarded or fed to wildlife.
<b>Cultural Resources</b>	Workers would be informed of the penalties for illegally collecting artifacts or intentionally damaging archeological or historic property. Workers would be informed of the correct notification procedures in the event that previously unknown resources were uncovered during construction. In the Reno-Benteen and Custer Battlefields a NPS archeologist would monitor all ground disturbance. The existing asphalt and sub-base would be removed and then an NPS qualified archeologist would conduct a metal detection survey and artifact recovery. Only after the archeologist has completed the survey and given permission to the construction engineer would work resume.

Resource Area	Mitigation Measure
	<p>If cultural material were uncovered during construction, work in the immediate area would be stopped, the site secured, and Little Bighorn Battlefield National Monument would consult according to 36 CFR 800.13.</p> <p>If human remains were uncovered during construction, the park superintendent would be contacted immediately and work in the vicinity would be stopped. In compliance with the Native American Grave Protection and Repatriation Act of 1990 (NAGPRA), the National Park Service would also notify and consult representatives of American Indian tribes likely to be culturally affiliated for the proper treatment of human remains, funerary, and sacred objects should these be discovered during the project. Work could resume only after an appropriate mitigation strategy is developed in consultation with the Montana State Historic Preservation Office and after archeological clearances are obtained.</p>
<p><b>Threatened, Endangered, or Special Concern Species</b></p>	<p>If nesting status of the bald eagle can not be confirmed prior to construction, bald eagle nesting surveys would be necessary. If nests were found within 0.5 miles of the project area, initiate consultation with USFWS and restrict all activities that may affect species.</p> <p>Nest surveys for state listed avian species of concern would be conducted unless vegetation removed prior to spring migration and establishment of breeding territories. If nests were located within 0.5 miles of the project area during nesting season, seasonal restrictions would be implemented to minimize / mitigate impacts to nests or individuals. Seed collection for revegetation efforts would be done by hand to avoid destroying ground nesting bird species. Mitigation could include removal of nesting habitat from areas of project disturbance prior to the nesting seasons (i.e. mowing, clearing). If nests were found during bird nest surveys a NPS biologist would work in cooperation with the construction contractor to provide protection such as moving or delaying construction to allow fledging of birds from nests.</p> <p>Prior to construction activities at Weir Point, this area would be inspected and evaluated by a NPS biologist to determine potential impacts to horned lizard. If potential conflicts with horned lizards in sensitive life stages were likely at this location, the NPS biologist would work in cooperation with the construction contractor to reduce impacts as much as possible. All construction related activities, including revegetation, at the cut slope bank would be avoided, if practicable, to minimize impacting the species and its habitat. If the cut slope bank cannot be avoided, the area of impact would be minimized to the greatest extent feasible in order to preserve the remainder of the habitat area in an undisturbed state. If revegetation is required, revegetation activities would be conducted in spring or fall during the wet season to minimize impacts during breeding season.</p>
<p><b>Unique Natural Area</b></p>	<p>To preserve and protect the genetic integrity of the grassland, which has been designated a pristine Unique Natural Area, the seed and plants used to revegetate would be indigenous to the monument. This would be accomplished by hand collection of seed of selected species within the park boundaries. The collected seed would be propagated and increased to a sufficient quantity by a Natural Resources Conservation Service (NRCS) Plant Materials Center (PMC) and returned to the park for establishment after completion of construction.</p> <p>Mitigation for exotic and invasive species is presented under the Vegetation section.</p>
<p><b>Wildlife</b></p>	<p>Seed collection for revegetation efforts would be done by hand to avoid destroying ground nesting bird species.</p>
<p><b>Vegetation</b></p>	<p>Disturbed areas, including areas adjacent to the Tour Road, visitor center and Reno-Benteen parking areas, would be allowed to return to natural conditions through a revegetation plan. Seed and plants used to revegetate the areas disturbed by the proposed road construction would be indigenous to the monument. This would be accomplished by hand collection of seed of selected species within the park boundaries. The collected seed would be propagated and increased to a sufficient quantity by a Natural Resources Conservation Service (NRCS) Plant Materials Center (PMC) and returned to the park for establishment after completion of construction.</p> <p>Ground surface treatment would include grading to natural contours, as well as roughing / scarification and mulching to promote natural seeding.</p>

Resource Area	Mitigation Measure
	<p>In an effort to avoid introduction of non-native plant species, no imported topsoil or hay bales would be used during revegetation. To prevent the introduction and minimize the spread of non-native vegetation and noxious weeds, An intense preconstruction control program, consisting of timely herbicide applications, would be initiated in the fall of 2005 and continued through 2006. For two years post construction, the revegetated areas would be monitored. Re-occurring invasive species and noxious weeds would be eradicated by herbicide treatments and/or manual pulling. In addition, the following measures would be implemented during construction:</p> <ul style="list-style-type: none"> <li>• Minimize soil disturbance.</li> <li>• Pressure wash and / or steam clean all construction equipment to ensure that all equipment, machinery, rocks, gravel, or other materials are cleaned and weed free before entering the monument to avoid introduction of non-native plants from sources outside the monument.</li> <li>• All construction equipment transporting material outside the construction limits would be brushed down after every drive.</li> <li>• Haul trucks bringing asphalt or other fill materials from outside the monument would be covered to prevent seed transport from sources outside the monument.</li> <li>• Machinery and equipment would be required to stay within the construction limits to prevent seed transport from sources outside the monument.</li> <li>• Fill, rock, or additional topsoil would be obtained from the project area or from NPS approved sources outside the monument.</li> <li>• Monitor disturbed areas for up to three years following construction to identify growth of non-native species or noxious weeds. Treatment of non-native vegetation would be completed in accordance with NPS Director's Order #77: Natural Resource Management Reference Manual (NPS 2004c).</li> </ul>
<b>Geology and Soils</b>	<p>Erosion and sediment control would be required. Disturbed sites within the construction area, including areas adjacent to the Tour Road, visitor center and Reno-Benteen parking areas, would be returned to natural conditions, and the site topography would be returned to its preconstruction contours as much as possible. Areas disturbed by construction would be revegetated to facilitate soil stability, help reduce runoff, channelization, and erosion, and to help the soil restore itself to natural conditions.</p>
	<p>Topsoil would be removed from areas of construction and stored for later reclamation use. The topsoil would be respread in as near the original location as possible and supplemented with scarification, mulching, seeding, and / or planting with species native to the immediate area.</p>
	<p>During periods of heavy rainfall the project engineer would issue a temporary stop order. During these work stoppage periods, project personnel would continue to check the silt fences and check dams, maintain the silt fences in effective condition, and remove accumulated sediment, as necessary, to ensure that soils were stabilized.</p>
<b>Air Quality</b>	<p>Fugitive dust would be controlled by periodic watering as necessary. Construction equipment would not be allowed to idle for extended periods of time.</p>

Resource Area	Mitigation Measure
<b>Water Quality</b>	<p>Best management practices for drainage and sediment control would be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas and water resources. Use of best management practices in the project area for drainage area protection would include all or some of the following actions, depending on site-specific requirements:</p> <ul style="list-style-type: none"> <li>• Keeping disturbed areas as small as practical to minimize exposed soil and the potential for erosion.</li> <li>• Locating waste and excess excavated materials outside of drainages to avoid sedimentation.</li> <li>• Installing silt fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures (including installing erosion-control measures around the perimeter of stockpiled fill material) prior to construction.</li> <li>• Marking wetland limits with construction tape or snow fencing to prevent intrusion into wetlands.</li> <li>• Using water for construction and dust control from sources outside the monument.</li> <li>• Conducting regular site inspections during the construction period to ensure that erosion-control measures were properly installed and are functioning effectively.</li> <li>• Storing, using, and disposing of chemicals, fuels, and other toxic materials in a proper manner.</li> </ul>
<b>Wetlands</b>	<p>Mitigation measures including best management practices would be implemented to minimize short-term impacts to wetlands. These could include active restoration (revegetation), excavation to original wetland soil, invasive species control, and erosion and sediment control. Work would be undertaken on the Deep Coulee and Medicine Tail Coulee culverts when the water is not flowing in the coulee.</p>
<b>Visitor Experience</b>	<p>Between November 1 and April 1 the entire Tour Road could be closed for up to four weeks due to construction; however the visitors could access the visitor center parking area and walk to the Indian Memorial and Last Stand Hill. In addition, between October 1 and April 30, the road could be closed during construction operations from Calhoun Loop to the terminus of the road at Reno Benteen. This same segment beyond Calhoun Loop could be closed Monday through Thursday between May 1 and Memorial Day weekend and Labor Day Weekend and September 30.</p>

## **ENVIRONMENTALLY PREFERRED ALTERNATIVE**

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In accordance with DO #12 and the National Environmental Policy Act, the National Park Service is required to identify the environmentally preferred alternative (NPS 2001a). The Council on Environmental Quality defines the environmentally preferred alternative as “the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act’s Section 101.” Under section 101(b) of the act, it is the continuing responsibility of federal agencies to

- (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;
- (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities; and
- (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”

The No-Action Alternative would continue to use the current Tour Road alignment and configuration with continuing maintenance of the roadway by Little Bighorn Battlefield National Monument. There would be no change in roadway or parking conditions under this alternative. The paved width of the travel lanes would vary from approximately 17-20 feet, with no shoulder. Rutting of the road surface due to heavy vehicle loads would continue, and the current practice of patching the rutting areas with asphalt would continue. The potential for vehicle accidents would persist due to the narrow pavement top; lack of shoulders; and the pavement edge dropping off at steep angles. Parking improvements to increase capacity and improve traffic flow at the visitor center and Reno-Benteen parking areas would not be undertaken. This is not the environmentally preferred alternative because it would not:

- reduce the need for road maintenance (criteria 1, 2, 3, and 6);
- provide better designed roadway and parking areas for enjoyment of monument resources (criteria 3 and 5); or
- address resource protection (criteria 1, 2, 3, 4, and 5).

Alternative B: Road Widening - 24’ Width (NPS Preferred Alternative), would rehabilitate, restore, resurface, and reconstruct the Tour Road and the visitor center and Reno-Benteen parking areas by improving the condition of the pavement and its underlying structure, thereby reducing routine maintenance needs and maintenance costs. In addition, the Tour Road would be widened to have a 24-foot top width, consisting of 11-foot travel lanes and 1-foot shoulders to improve travel conditions, improve visitor experience, and enhance resource protection. The visitor center and Reno-Benteen parking lots would be reconstructed to provide increased parking capacity and improved traffic flow through the parking lots. Based on the above criteria, the National Park Service has determined that Alternative B: Road Widening - 24’ Width (NPS Preferred Alternative) is the environmentally preferred alternative because it would:

- prevent the loss of natural and cultural resources by providing better designed parking and roadway, thus greatly reducing the potential for vehicles traveling off paved surfaces due to widening the Tour Road to 24' (criteria 1 and 4); and
- protect public health and safety by repairing deteriorating road surfaces, and greatly improve the driving experience through the monument as a result of widening the Tour Road to 24' and redesigning parking areas (criteria 2, 3 and 5).

Alternative C: Road Widening - 22' Width would rehabilitate, restore, resurface, and reconstruct the Tour Road and the visitor center and Reno-Benteen parking areas by improving the condition of the pavement and its underlying structure, thereby reducing routine maintenance needs and maintenance costs. In addition, the Tour Road would be widened to have a 22-foot top width, two 10-foot travel lanes and 1-foot shoulders on both sides of the travel lanes to improve conditions. The visitor center and Reno-Benteen parking lots would be reconstructed to provide increased parking capacity and improved traffic flow through the parking lots. This alternative is not environmentally preferred because it would not:

- prevent the loss of natural and cultural resources by providing a better designed parking and roadway, thus slightly reducing the potential for vehicles traveling off paved surfaces due to the roadway being only widened to 22 feet (criteria 1 and 4); and
- protect public health and safety by only improving slightly the driving experience through the monument as a result of widening the tour road to 22 feet and redesigning parking areas (criteria 2, 3 and 5).

## ALTERNATIVES AND OPTIONS CONSIDERED BUT DISMISSED

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### Alternatives Considered but Dismissed

**Mill and Overlay Within Existing Roadway.** This alternative would follow the 3R (rehabilitate, restore, and resurface) concept proposed in the 2002 project. Under this alternative, the new roadway would remain within the existing alignment and roadway bench. This would be a replace-in-kind design, limited to minimal adjustments for correcting non-standard cross-slopes and vertical and horizontal curves. The Mill and Overlay within Existing Roadway alternative was dismissed because it would not fully repair structural deficiencies to the Tour Road and did not substantially improve safety for monument visitors traveling the Tour Road, which are part of the purpose and need of the project.

**Road Widening - 28' Width.** This alternative proposed full widening of the roadway to meet the NPS Road Standards for a Class I Principal Park Road. Given a 20-year expected average daily traffic (ADT) volume of 2800, the minimum standard cross section dimensions for a Class I Principal Park Road are 11-foot wide travel lanes and 3-foot wide shoulders, resulting in an overall top width of 28 feet. Design speed would be 30 mph/50 kph.

This alternative was dismissed because it is contrary to the purpose of the national monument, "to preserve, protect and interpret the historic, cultural, and natural resources pertaining to the Battle of the Little Bighorn." The additional roadway width and the wider cross section required for larger cut and fill areas would have greater impacts to the historic structures, such as the headstones that identify burial sites, than the 22-foot and 24-foot width alternatives. Because the potential for cultural resource impacts would be great under this alternative, the Road Widening - 28' Width Alternative was dismissed from further analysis.

## Design Options Considered but Dismissed

**Visitor Center Parking Lot - Oversized Vehicle Parallel Parking.** This alternative proposed providing a dedicated road for both east- and westbound traffic north of the existing parking lot. Oversized vehicle parking would then be provided in parallel parking spaces on each side of the road. This alternative would reduce resource impacts by keeping the parking area footprint as close as possible in size to the existing footprint. This design option was dismissed because it would create additional traffic conflicts between through traffic and oversized vehicles trying to parallel park adjacent to the through travel lanes. These conflicts would worsen rather than improve traffic operations in the area and would therefore conflict with the purpose and need of this project.

**Reno-Benteen Parking Lot - Minimum Oversized Vehicle Parking East of Lot.** This alternative proposed reconfiguring the Reno-Benteen parking lot to provide oversized vehicle parking spaces on the east side of the lot. The alternative would also provide a dedicated bus drop-off space on the west side of the parking lot. This design option was dismissed because it would expand the parking lot footprint into areas containing sensitive cultural resources, particularly on the east side of the lot. Disturbance of cultural resources in this area would conflict with the monument purpose and mission of preserving, protecting and interpreting historic and cultural resources pertaining to the Battle of the Little Bighorn.

## COMPARATIVE SUMMARY OF ALTERNATIVES

A comparison of alternatives is provided below in Table 2. Included are a brief description of each alternative and an explanation of the degree to which each alternative accomplishes the purpose and need of the project.

**Table 2. Comparative Summary of Alternatives**

	<b>Alternative A: No Action</b>	<b>Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)</b>	<b>Alternative C: Road Widening - 22' Width</b>
Roadway Design	Maintain existing conditions on the Tour Road and visitor center and Reno-Benteen parking areas.	Improve pavement and shoulder conditions and correct structural deficiencies on the Tour Road. This alternative would follow the existing alignment.	Improve pavement and shoulder conditions and correct structural deficiencies on the Tour Road. This alternative would follow the existing alignment.
Tour Road	The Tour Road would continue to be 17 - 20-feet wide with no shoulder. This alternative does not meet the 1984 Park Road Standards for 11-foot travel lanes. This alternative maintains the poor pavement and shoulder conditions, and the edge of pavement dropping off at steep angles. The current maximum 35-mph/56 kph posted speed limit would remain.	This alternative would have a 24-foot top width, consisting of 11-foot travel lanes and 1-foot shoulders. This alternative meets the 1984 Park Road Standards for 11-foot travel lanes. Rehabilitation would include structural repair of the road base and resurfacing the roadway. The posted and design speeds would be 30 mph/50 kph.	This alternative would have a 22-foot top width, consisting of 10-foot travel lanes and 1-foot shoulders. This alternative does not meet the 1984 Park Road Standards of an 11-foot travel lane. Rehabilitation would include structural repair of the road base and resurfacing the roadway. The posted and design speeds would be 30 mph/50 kph.

	<b>Alternative A: No Action</b>	<b>Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)</b>	<b>Alternative C: Road Widening - 22' Width</b>
Visitor Center Parking Lot	Maintain existing conditions at visitor center parking area.	Construction of a dedicated road for both east- and westbound traffic north of the existing parking lot and expansion to the north to provide a pull-through RV and bus parking area. Additional passenger vehicle parking spaces provided.	Modifications to the visitor center parking lot would be the same as described for Alternative B.
Reno-Benteen Parking Lot	Maintain existing conditions at Reno-Benteen parking area.	Expand the parking lot beyond its existing footprint to provide additional parking spaces for RVs, buses, and passenger vehicles and a wider turn radius for oversized vehicles.	Modifications to the Reno-Benteen parking lot would be the same as described for Alternative B.
Meets Project Purpose and Need?	No, because poor pavement and shoulder conditions and structural deficiencies on the Tour Road would remain. Visitor experience and safety would not be improved on the Tour Road because the road would not be widened. Traffic flow and capacity would not be improved at visitor center and Reno-Benteen parking lots. Visitor experience would not be improved because road width would continue to vary. Resource damage would continue along the shoulders where the road is narrower.	Yes, because poor pavement and shoulder conditions and structural deficiencies on the Tour Road would be improved. This would improve visitor experience and safety on the Tour Road. Traffic flow and capacity issues would be addressed at the visitor center and Reno-Benteen parking lots, thus improving visitor experience and safety. Visitor experience would be improved because the road would be noticeably wider and easier to drive. Resource damage would be substantially reduced at the Tour Road shoulders.	Yes, because poor pavement and shoulder conditions and structural deficiencies on the Tour Road would be improved. This would improve visitor experience and safety on the Tour Road. Traffic flow and capacity issues would be addressed at the visitor center and Reno-Benteen parking lots, thus improving visitor experience and safety. Visitor experience would be slightly improved because the road would be wider. Resource damage would be slightly reduced at the Tour Road shoulders.

## SUMMARY OF ENVIRONMENTAL CONSEQUENCES

A comparison of environmental consequences for each of the alternatives is provided below in Table 3.

**Table 3. Summary of Environmental Consequences**

<b>Impact Topic</b>	<b>Alternative A: No - Action</b>	<b>Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)</b>	<b>Alternative C: Road Widening - 22' Width</b>
Archeological Resources	The No-Action Alternative would have adverse site-specific negligible impacts on archeological resources. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is anticipated.	Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would have adverse site-specific negligible to minor impacts on archeological resources. For purposes of Section 106 consultation, a determination	Alternative C: Road Widening - 22' Width would have adverse site-specific negligible to minor impacts on archeological resources. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is

Impact Topic	Alternative A: No - Action	Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)	Alternative C: Road Widening - 22' Width
		of <i>no adverse effect</i> is proposed.	proposed.
Historic Structures	The No-Action Alternative would have no effect on historic structures. For purposes of Section 106 consultation, a determination of <i>no effect</i> on historic structures is anticipated.	Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) could have an adverse site-specific negligible effect on LCS #11522 and an adverse site-specific negligible effect on LCS #11523. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is anticipated.	Alternative C: Road Widening - 22' Width could have an adverse site-specific negligible effect on LCS #11522 and an adverse site-specific negligible effect on LCS #11523. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is anticipated.
Ethnographic Resources	The No-Action Alternative would have adverse site-specific negligible impacts on ethnographic resources. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is anticipated.	Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would have an adverse site-specific negligible to minor effect on ethnographic resources. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is anticipated.	Alternative C: Road Widening - 22' Width would have an adverse site-specific negligible to minor effect on ethnographic resources. For purposes of Section 106 consultation, a determination of <i>no adverse effect</i> is anticipated.
Visitor Experience	There would be no short-term impacts on visitor experiences from construction-related activities. Impacts on visitor experience would continue to be adverse site-specific negligible long-term for access to interpretation and educational opportunities due to insufficient parking capacity and congestion at the Visitor Center and Reno-Benteen parking areas; and adverse site-specific minor long term due to the poor pavement and edge conditions and the narrow width of the Tour Road.	Impacts on visitor experiences would be adverse site-specific minor in the short term from construction-related activities. There would be beneficial minor to moderate long-term impacts for access to interpretation and educational opportunities due to improved parking at the Visitor Center and Reno-Benteen parking areas; and beneficial moderate long-term impacts on safety from the improved pavement and edge conditions and the wider width (24 ft) of the Tour Road.	Impacts on visitor experiences would be adverse site-specific minor in the short term from construction-related activities. There would be beneficial minor to moderate long-term impacts for access to interpretation and educational opportunities due to improved parking at the Visitor Center and Reno-Benteen parking areas; and beneficial minor long-term impacts on safety from the improved pavement and edge conditions and the wider width (22 ft) of the Tour Road.

# AFFECTED ENVIRONMENT

## INTRODUCTION

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Little Bighorn Battlefield National Monument , located in Big Horn County Montana, contains approximately 765 acres in two parcels. The main parcel contains the ridge where Custer made his last stand against the Indians, marble headstones on the hillside where his men fell, and a granite monument inscribed with the names of those soldiers, civilians and Indian scouts attached to the 7<sup>th</sup> Calvary killed in the battle on Last Stand Hill. A two-third mile access road leads from U.S. Highway 212 into the Last Stand area of the monument. Also included in this parcel are the visitor center, parking area, a stone house built in 1894, the Indian Memorial dedicated in 2003, and the national cemetery. The second parcel, connected to the first by the Tour Road, contains the site of the Reno-Benteen defense perimeter. This site includes a parking area, historical marker, and an interpretive trail.

Detailed information describing resources in Little Bighorn Battlefield National Monument may be found in the *Final General Management and Development Concept Plans* (NPS 1995), *Little Bighorn National Monument, Resource Management Plan* (NPS 1999a), and *Archeological Mitigation of the Federal Lands Highway Program Plan to Rehabilitate Tour Road, Route 10, Little Bighorn Battlefield National Monument, Montana* (NPS 2005a).

## ARCHEOLOGICAL RESOURCES

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Extensive archeological surveys were conducted by the Midwest Archeological Center in 1984, 1985, 1989 and 1994. The 1984 and 1985 archeological inventories covered the Custer Battlefield and Reno-Benteen Battlefield with 2-meter wide metal detection and visual techniques. Archeological materials, including some human remains (associated from the original 1876-1881 7<sup>th</sup> Calvary gravesites) from various Seventh Cavalry marble headstones, were identified, collected and analyzed (NPS 2005a).

Ten archeological sites have been identified within Little Bighorn Battlefield National Monument. These include nine prehistoric lithic scatter sites (located on the Custer Battlefield). And one archeological site pertaining to the historic battle of the Little Bighorn that encompasses both the Custer and Reno-Benteen Battlefields (NPS 2005a). The sites discussed in this section are those sites that are within or near the area of potential effect (APE). The APE for this project includes the new cut and fill slopes along the Tour Road, and the visitor center and Reno-Benteen parking areas that would be reconfigured and expanded.

One historic archeological site and one prehistoric archeological site are within the APE. The historic archeological site that encompasses the two battlefields (Last Stand and Reno-Benteen) contains firearms and ammunition, knives, arrowheads, clothing and personal items, accessories and equipment, and miscellaneous items. The prehistoric site consisting of a lithic scatter is located on Calhoun Ridge/Lame White Man Charge wayside pullout, on the east side of the Tour Road. There is the potential for archeological materials to be buried under the existing asphalt since there were no archeological surveys conducted before the asphalt was laid down in 1964.

## HISTORIC STRUCTURES

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Within the project area, there are two historic structures identified on the park's List of Classified Structures (LCS): the white marble headstones (LCS#11522), which mark the approximate location for the burial sites of U.S. military soldiers, and the earthen fortifications at Reno-Benteen Battlefield (LCS #11523). In some cases the marble headstones were moved or misplaced during their initial installation or after previous road work dating back to when it became a dirt tour road through the monument in 1938.

## ETHNOGRAPHIC RESOURCES

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According to the NPS *Cultural Resource Management Guideline* (DO #28), ethnographic resources are defined by the National Park Service as "any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it" (NPS 1998).

The Battle of the Little Bighorn has generated multiple perspectives regarding its significance. To the late 19<sup>th</sup> century Euro-American immigrant, the battle was a pivotal event in a long series of violent clashes with American Indian People. This crushing defeat was a serious incentive for the U.S. Military to end American Indian resistance to immigrant settlement throughout the intermountain west. For American Indians, the battle was (and continues to be) seen as a significant victory (although a temporary one) to retain their traditional way of life which had witnessed continuous encroachment on their homelands and sacred ground. From an ethnographic perspective, the battle became, and remains to this day, a significant symbolic event for two major cultural groups (Indian & Non-Indian) seeking to maintain their respective values and life ways in the face of cross-cultural contact and conflict. American Indians affiliated with the site are those tribes whose ancestors participated in the battle. These include the Lakota, Cheyenne, Arapaho, Crow, and Arikara tribes.

All of the prehistoric and historic archeological resources described above under the archeological resource section are managed as if they contain ethnographic resources. On May 1, 1987 Last Stand Hill, Reno-Benteen battlefield, and the National Cemetery were listed on the National Register of Historic Places.

## VISITOR EXPERIENCE & SAFETY

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Little Bighorn Battlefield National Monument saw approximately 426,000 total recreation visits during fiscal year 2003 (NPS 2005b). Peak visitation occurs during the months of June, July, and August and accounts for 72 percent of visitation, according to NPS traffic count data of vehicles entering the monument (RPA 1998). Many monument visitors are traveling to and from other national parks farther west, although the monument is frequently the destination of "Custer buffs", Native Americans, and history enthusiasts. The average length of stay is about one hour, and visitation peaks from June through August. Fall visitation accounts for 15 percent, winter for one percent, and spring for 12 percent of total yearly visitation (NPS 1999b).

Little Bighorn Battlefield National Monument offers a wide range of interpretive and educational opportunities. Visitor experience of interpretation and educational opportunities are directly affected by the experiences that visitors have when they arrive at the monument and make their way to its principal resources. The principal resources in the monument include the Custer Battlefield and Reno-Benteen Battlefield, the Custer National Cemetery, the monument's museum and archives, and the Indian Memorial. Talks on the battle and related themes are presented at the

visitor center during the summer. Guided bus tours are offered through the concessionaire at Little Big Horn College, and self-guided walking tours are available for the battle-related sites and the national cemetery.

Three walking trails have been established: Reno-Benteen Defense site, five miles south of the Custer field; Keogh / Crazy Horse position on battle ridge; and along Deep Ravine, west of battle ridge. Custer National Cemetery, contains burials that are historic to northern plains events as well as burial of veterans and dependents from 1879-present. White Swan Memorial Library contains the finest collection of research materials available on the battle of the Little Bighorn, as well as other related historical events.

The self-guiding Tour Road enables visitors to follow and observe the sites related to the battle. Approximately 45 percent of monument visitors drive the Tour Road through the monument and private land (NPS 2004d). The Tour Road is the only road open to the public in the monument, and begins at the monument entrance station, proceeds through the Custer Battlefield, enters private land and then re-enters the monument at the Reno-Benteen Battlefield, where it terminates at the turnaround in the Reno-Benteen parking area.

The monument's main parking lot is the visitor center parking lot, located at the visitor center immediately inside the entrance to the monument. The visitor center parking lot consists of three smaller lots known as the visitor center parking area, the Main Road parking area, and the Stonehouse parking area. For purposes of this discussion, they are referred to collectively as the visitor center parking lot. This parking area provides interpretive and educational opportunities; and access to the visitor center, museum, Custer National Cemetery, Deep Ravine and Keogh / Crazy Horse trails, and the monument headquarters.

There are several parking spaces at pullouts along the Tour Road, which provide access to interpretive and educational opportunities, and scenic views of the battlefields.

A second smaller lot is located at the Reno-Benteen Battlefield at the terminus of the Tour Road. This lot functions both as a parking lot and as a turnaround loop at the end of the Tour Road. The parking area provides interpretive and educational opportunities, scenic views of the Reno-Benteen Battlefield, and access to the Reno-Benteen Defense site trail.

The existing paved width of the Tour Road travel lanes is narrow, varying from 17-20 feet, and does not have a shoulder. In addition, the pavement edge drops off at steep angles, resulting in potentially unsafe roadway edge conditions. Recreational vehicle traffic poses potential safety concerns, as drivers of these large vehicles tend to steer off of the roadway in order to avoid oncoming traffic because of the narrow roadway. As the recreational vehicles veer off the roadway, the steep pavement edge makes it difficult for these vehicles to maneuver back on to the roadway safely.

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# ENVIRONMENTAL CONSEQUENCES

## INTRODUCTION

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This section describes the potential environmental consequences associated with the no-action and action alternatives. The methodology for assessing impacts is presented first for each impact topic. Next, the section is organized by resource topic, and provides a standardized comparison between alternatives based on the most relevant topics described under the “Purpose and Need” chapter. In accordance with the National Environmental Policy Act, impacts are described in terms of context, intensity, and duration; and cumulative impacts. Mitigating measures for adverse impacts are also described. NPS policy also requires a determination of whether any impacts would result in the impairment of park resources or values.

## METHODOLOGY

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The National Park Service based these impact analyses and conclusions on the review of existing literature and Little Bighorn Battlefield National Monument studies, information provided by experts at the monument and in other agencies, and best professional judgment.

The following definitions were used to evaluate the type of impact, context, intensity, duration, and cumulative nature of impacts associated with the project alternatives.

- **Type of Impact** - Impacts can be beneficial or adverse. Beneficial impacts would improve resource conditions while adverse impacts would deplete or negatively alter resources.
- **Context** - Context is the setting within which an impact occurs and can be site specific, local, monumentwide, or regionwide. Site-specific impacts would occur at the location of the action, local impacts would occur within the general vicinity of the project area, monumentwide impacts would affect a greater portion of the monument and regionwide impacts would extend beyond monument boundaries.
- **Intensity** - Impact intensity is the degree to which a resource would be beneficially or adversely affected. The criteria that were used to rate the intensity of the impacts for each resource topic are presented below under “impact intensity thresholds”.
- **Duration** - Impacts can be either short term or long term. A short-term impact would be temporary in duration and would be associated with road and parking area construction, as well as the period of site restoration. Depending on the resource, impacts would last as long as construction was taking place, for a single year or growing season, or longer. Long-term impacts last beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction. Impact duration for each resource is unique to that resource and is presented for each resource topic.

## Direct and Indirect Impacts

NPS policy requires that direct and indirect impacts be considered, but not specifically identified. Direct effect is caused by an action and occurs at the same time and place. Indirect effect is caused by an action later in time, but still reasonably foreseeable and farther removed in distance.

## Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations, which implement NEPA, requires assessment of cumulative impacts in the decision-making process for federal projects. Cumulative effects are defined by the CEQ regulations as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively major, actions taking place over a period of time.

Cumulative impacts / analysis includes projects both within and outside the monument. To determine potential cumulative impacts outside the monument, projects in the area surrounding Little Bighorn Battlefield National Monument were identified. The area included nearby lands administered by the state, county, private, etc. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or that would be implemented in the reasonably foreseeable future. It was also necessary to identify other past and ongoing or reasonably foreseeable future projects at the monument.

These cumulative actions are evaluated in the cumulative impact analysis in conjunction with the impacts of each alternative to determine if they would have any additive effects on a particular cultural resource or visitor use. When the overall cumulative analysis is moderate or major an additional level of analysis is conducted. This analysis determines how much the proposed alternative contributes to the overall cumulative impact. The proposed alternative contribution is identified as detectable, noticeable, or appreciable, in ascending order. Because some of these cumulative actions are in the early planning stages, the evaluation of cumulative effects was based on a general description of the project. Projects that make up the cumulative impact scenario are listed below under past actions, or current and future actions.

**Past Actions.** *Improvements to Battle Ridge Trails* - Two historic trails on the Battle Ridge were studied in an environmental assessment (NPS 1999b). These trails were open to the public prior to 1991, but were closed due to concerns about resource damage. The trails provided access to two important areas of the battlefield and provided a valuable interpretive experience of the battle. These trails were reopened to the public in the summer of 1999.

**Current and Future Actions.** *Visitor Center Addition* - The visitor center is being expanded to increase the theater capacity and provide American Disabilities Act (ADA) accessibility. The expansion will be located where the existing outdoor patio lies.

*Indian Memorial Project* - Phase 1 of this project involved the construction of an Indian Memorial southeast of the visitor center. Phase 2 of this project is currently underway and includes revegetation at the Memorial, a sidewalk, interpretive panels, development of a policy regarding offerings left at the memorial, and curatorial management of the offerings.

*Highway 212 Reconstruction* - The Montana Department of Transportation is reconstructing Highway 212, which runs north of the monument. As part of this reconstruction project, the intersection of Highway 212 and the monument entrance road is being reconstructed. Construction is planned for completion in 2006.

*State Rest Area Expansion and I-90 / Highway 212 Interchange* - The Montana Department of Transportation is studying improvements to the I-90 / Highway 212 interchange north of the monument and is planning to expand the state rest area to include a new state visitor center. The project is currently under study and will be documented in an environmental impact statement.

## Impairment of Park Resources or Values

In addition to determining the environmental consequences of the preferred and other alternatives, NPS *Management Policies 2001* require an analysis of potential effects to determine whether or not actions would impair Little Bighorn Battlefield National Monument resources and values (NPS 2000a). The fundamental purpose of the national park system, as established by the NPS Organic Act (16 USC 1-4) and reaffirmed by the General Authorities Act of 1970, as amended (16 USC 1a-1 et seq.), begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values.

Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values. An impact to any park resource or value may constitute impairment. However, an impact would be more likely to constitute an impairment to the extent that it has a major adverse effect on a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
- key to the natural or cultural integrity of the park; or
- identified as a goal in the *Final General Management and Development Concept Plans* or other relevant NPS planning documents.

Impairment may result from NPS activities in managing the monument, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the monument. In this “Environmental Consequences” section, a determination on impairment is made in the conclusion statement for archeological resources, historic structures, and ethnographic resources. The National Park Service does not analyze recreational values / visitor experience (unless impacts are resource based).

**Impacts to Cultural Resources and Section 106 of the National Historic Preservation Act.** Impacts to cultural resources are described in terms of type, context, duration, and intensity, which is consistent with the CEQ regulations for implementing the National Environmental Policy Act. However, the impact analysis also complies with the requirements of section 106 of the National Historic Preservation Act, as amended (16 USC 470 et seq.). In accordance with the Advisory Council on Historic Preservation’s (ACHP) regulations implementing section 106 of the act (36 CFR 800), impacts to archeological resources and historic structures were identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that were either listed on or eligible for listing on the National Register of Historic Places; (3) applying the criteria of adverse effect to affected cultural resources either listed on or

eligible for listing on the national register; and (4) considering ways to avoid, minimize or mitigate adverse effects.

Under the regulations of the ACHP a determination of either *adverse effect* or *no adverse effect* must also be made for affected national register eligible cultural resources. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualifies it for inclusion on the national register (e.g., diminishing the integrity of the resource’s location, design, setting, materials, workmanship, feeling, or association). Adverse effects also include reasonably foreseeable effects caused by the action alternatives that would occur later in time, be farther removed in distance, or be cumulative (36 CFR 800.5, Assessment of Adverse Effects). A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion on the national register. If there are no impacts to cultural resources, the determination is *no effect* on cultural resources.

CEQ regulations and NPS *Director’s Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-making* also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor (NPS 2001a). Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation only under the National Environmental Policy Act. It does not suggest that the level of effect as defined by section 106 would be similarly reduced. Although adverse effects under Section 106 could be mitigated, the effect would remain adverse.

A section 106 summary is included in the impact analysis sections for archeological resources, historic structures and ethnographic resources. The summary is an assessment of the effect of the undertaking on cultural resources, based on the criteria of effect and adverse effect found in the Advisory Council’s regulations.

## ARCHEOLOGICAL RESOURCES

### Impact Thresholds

All available information on archeological resources was compiled from the Archeological Mitigation of the Federal Lands Highway Program Plan to Rehabilitate Tour Road, Route 10, Little Bighorn Battlefield National Monument (NPS 2005a). The area of potential effect (APE) was identified as the construction area of the proposed alternatives. The APE for this project includes the new cut and fill slopes along the Tour Road, and the visitor center and Reno-Benteen parking areas that would be reconfigured and expanded.

For purposes of analyzing impacts to the identified archeological resources, the thresholds of change for intensity of an impact are defined below:

Impact Intensity	Intensity Definition
Negligible	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be <i>no adverse effect</i> .
Minor	<b>Adverse impact</b> - disturbance of a site(s) results in little, if any, loss of integrity. The determination of effect for Section 106 would be <i>no adverse effect</i> . <b>Beneficial impact</b> - maintenance and preservation of a site(s). The determination of effect for Section 106 would be <i>no adverse effect</i> .
Moderate	<b>Adverse impact</b> - disturbance of a site(s) results in loss of integrity. The determination

Impact Intensity	Intensity Definition
	<p>of effect for Section 106 would be <i>adverse effect</i>. A memorandum of agreement is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate.</p> <p><b>Beneficial impact</b> - stabilization of a site(s). The determination of effect for Section 106 would be <i>no adverse effect</i>.</p>
Major	<p><b>Adverse impact</b> - disturbance of a site(s) results in loss of integrity. The determination of effect for Section 106 would be <i>adverse effect</i>. Measures to minimize or mitigate adverse impacts cannot be agreed upon and the National Park Service and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).</p> <p><b>Beneficial impact</b> - active intervention to preserve a site(s). The determination of effect for Section 106 would be <i>no adverse effect</i>.</p>

Short-term and long-term effects on archeological resources are not considered during the impact analysis because once the archeological resource is affected it does not recover, so the impact is immediate and forever.

### Impacts of Alternative A: No - Action

**Impact Analysis.** One historic archeological site encompassing the two battlefields (Last Stand and Reno-Benteen) and one prehistoric archeological site located on Calhoun Ridge/Lame White Man Charge wayside pullout are within the APE. At the Last Stand and Reno-Benteen historic archeological sites, degradation could continue as a result of vehicles driving off the narrow Tour Road. Impacts to archeological resources would be adverse site-specific negligible. There would be no impact to the one prehistoric archeological site located within the APE.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect archeological resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have adverse site-specific negligible cumulative impacts on archeological resources.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation’s criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative A: No- Action would have *no adverse effect* on archeological resources located in Little Bighorn Battlefield National Monument.

**Conclusion.** The No-Action Alternative would have adverse site-specific negligible impacts on archeological resources. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have adverse site-specific negligible cumulative impacts on archeological resources and the Section 106 determination would be *no adverse effect*.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument’s *Final General*

*Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to archeological resources.

### **Impacts of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)**

**Impact Analysis.** One historic archeological site encompassing the two battlefields (Last Stand and Reno-Benteen) and one prehistoric archeological site located on Calhoun Ridge/Lame White Man Charge wayside pullout are within the APE. Mitigation requires a NPS archeologist be on site during ground disturbance at Last Stand Hill and Reno-Benteen parking lot. The archeologist would assess the artifacts for integrity, significance, and historical contribution to the site. If artifacts were located within the APE, impacts would be adverse site-specific negligible to minor (depending on number, type and integrity). If no artifacts were found, there would be no impact to archeological resources.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect archeological resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with Alternative B, would have adverse site-specific negligible to minor cumulative impacts on archeological resources. Alternative B would have a noticeable contribution to the adverse site-specific negligible to minor cumulative impacts on archeological resources.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would be a *no adverse effect* on archeological resources located in Little Bighorn Battlefield National Monument. This environmental document and a data recovery plan (in place of a Memorandum of Agreement) have been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

To minimize any potential disturbance in the Last Stand Hill battlefield and Reno-Benteen parking area, a NPS archeologist would monitor all ground disturbance. If during construction previously undiscovered archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed, if necessary, in consultation with the Montana State Historic Preservation Office (SHPO). If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

**Conclusion.** Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would have adverse site-specific negligible to minor impacts on archeological resources. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative B, would have adverse site-specific negligible to minor cumulative impacts on archeological resources and the Section 106 determination would be a *no adverse effect*.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to archeological resources.

## Impacts of Alternative C: Road Widening - 22' Width

**Impact Analysis.** One historic archeological site encompassing the two battlefields (Last Stand and Reno-Benteen) and one prehistoric archeological site located on Calhoun Ridge/Lame White Man Charge wayside pullout are within the APE. Mitigation requires a NPS archeologist be on site during ground disturbance at Last Stand Hill and Reno-Benteen parking lot. The archeologist would assess the artifacts for integrity, significance, and historical contribution to the site. If artifacts were located within the APE, impacts would be adverse site-specific negligible to minor (depending on number, type and integrity). If no artifacts were found, there would be no impact to archeological resources.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect archeological resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with Alternative C, would have adverse site-specific negligible to minor cumulative impacts on archeological resources. Alternative B would have a noticeable contribution to the adverse site-specific negligible to minor cumulative impacts on archeological resources.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative C: Road Widening - 22' Width would be a *no adverse effect* on archeological resources located in Little Bighorn Battlefield National Monument. This environmental document and a data recovery plan (in place of a Memorandum of Agreement) have been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

To minimize any potential disturbance in the Last Stand Hill battlefield and Reno-Benteen parking area, a NPS archeologist would monitor all ground disturbance. If during construction previously undiscovered archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed, if necessary, in consultation with the Montana State Historic Preservation Office (SHPO). If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

**Conclusion.** Alternative C: Road Widening - 22' Width (NPS Preferred Alternative) would have adverse site-specific negligible to minor impacts on archeological resources. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative C, would have adverse site-specific negligible to minor cumulative impacts on archeological resources and the Section 106 determination would be a *no adverse effect*.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to archeological resources.

## HISTORIC STRUCTURES

### Impact Thresholds

All available information on historic structures was compiled from the *Little Bighorn Battlefield National Monument's List of Classified Structures* (NPS 1982). The area of potential effect (APE) was identified as the construction area of the proposed alternatives. The APE for this project includes the new cut and fill slopes along the Tour Road, and the visitor center and Reno-Benteen parking areas that would be reconfigured and expanded.

For purposes of analyzing impacts to the identified historic structures, the thresholds of change for intensity of an impact are defined below:

Impact Intensity	Intensity Definition
Negligible	Impact is at the lowest levels of detection with neither adverse nor beneficial consequences. The determination of effect for Section 106 would be <i>no adverse effect</i> .
Minor	<b>Adverse impact</b> - alteration of a feature(s) would not diminish the overall integrity of the resource. The determination of effect for Section 106 would be <i>no adverse effect</i> . <b>Beneficial impact</b> - stabilization/preservation of features in accordance with the <i>Secretary of the Interior's Standards for the Treatment of historic properties</i> . The determination of effect for Section 106 would be <i>no adverse effect</i> .
Moderate	<b>Adverse impact</b> - alteration of a feature(s) would diminish the overall integrity of the resource. The determination of effect Section 106 would be <i>adverse effect</i> . A memorandum of agreement (MOA) is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). Measures identified in the MOA to minimize or mitigate adverse impacts reduce the intensity of impact under NEPA from major to moderate. <b>Beneficial impact</b> - rehabilitation of a structure in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> . The determination of effect Section 106 would be <i>no adverse effect</i> .
Major	<b>Adverse impact</b> - alteration of a feature(s) would diminish the overall integrity of the resource. The determination of effect for Section 106 would be <i>adverse effect</i> . Measures to minimize or mitigate adverse impacts cannot be agreed upon and the National Park Service and applicable state or tribal historic preservation officer and/or Advisory Council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b). <b>Beneficial impact</b> - restoration of a structure in accordance with the <i>Secretary of the Interior's Standards for the Treatment of Historic Properties</i> . The determination of effect for Section 106 would be <i>no adverse effect</i> .

### Impacts of Alternative A: No - Action

**Impact Analysis.** Within the project area, there are two historic structures identified on the park's List of Classified Structures (LCS): the white marble headstones (LCS#11522), which mark the approximate location for the burial sites of U.S. military soldiers, and the earthen fortifications at Reno-Benteen Battlefield (LCS #11523). Under the No-Action Alternative, no impacts would occur to these sites, and so there would be no effect on historic structures.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect archeological resources include Visitor Center Addition, Indian Memorial Project, Highway

212 Reconstruction, and improvements to the Battle Ridge trails. The No-Action Alternative would have no contribution to the cumulative impacts on historic structures.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that since there is no effect to historic structures under NEPA from Alternative A: No - Action, the Section 106 determination would be *no effect* on historic structures. This environmental document has been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

**Conclusion.** The No-Action Alternative would have no effect on historic structures. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have no effect on historic structures and the Section 106 determination would be *no effect* on historic structures.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to historic structures.

### Impacts of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)

**Impact Analysis.** Within the project area, there are two historic structures identified on the park's List of Classified Structures (LCS): the white marble headstones (LCS#11522), which mark the approximate location for the burial sites of U.S. military soldiers, and the earthen fortifications at Reno-Benteen Battlefield (LCS #11523). The National Park Service conducted a 100 percent metal detection survey within the APE. The positive results required an additional Ground Penetrating Radar (GPR) survey at LCS #11523 that was conducted in May 2005 under the direction of Dr. Doug A. Scott (MWAC). Dr. Scott's preliminary report states there were no anomalies in the subsurface, which means there are no subsurface features that would indicate earthen fortifications within the APE. Based on these survey results, Alternative B would have an adverse site-specific negligible effect on LCS #11522 and an adverse site-specific negligible effect on LCS#11523. A final field report that documents the metal detection and GPR survey methodologies, results, and recommendations will be forwarded to the Montana SHPO.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect archeological resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with Alternative B, would have adverse site-specific negligible cumulative impacts on historic structures. Alternative B would have a noticeable contribution to the adverse site-specific negligible cumulative impacts on historic structures.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would have *no adverse effect* on historic structures LCS#11522 and LCS#11523 located in Little Bighorn Battlefield National Monument. This environmental document and a data recovery plan (in place of a Memorandum of Agreement) have been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

**Conclusion.** Under Alternative B: Road Widening - 24' Width (NPS Preferred Alternative), the impacts could be adverse site-specific negligible for LCS #11522 and adverse site-specific negligible for LCS #11523. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative B, would have adverse site-specific negligible cumulative impacts on historic structures. Under Section 106, the determination of effect would be *no adverse effect* for historic structures.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to historic structures.

### Impacts of Alternative C: Road Widening - 22' Width

**Impact Analysis.** Within the project area, there are two historic structures identified on the park's List of Classified Structures (LCS): the white marble headstones (LCS#11522), which mark the approximate location for the burial sites of U.S. military soldiers, and the earthen fortifications at Reno-Benteen Battlefield (LCS #11523). The National Park Service conducted a 100 percent metal detection survey within the APE. The positive results required an additional Ground Penetrating Radar (GPR) survey at LCS #11523 that was conducted in May 2005 under the direction of Dr. Doug A. Scott (MWAC). Dr. Scott's preliminary report states there were no anomalies in the subsurface, which means there are no subsurface features that would indicate earthen fortifications within the APE. Based on these survey results, Alternative C would have an adverse site-specific negligible effect on LCS #11522 and an adverse site-specific negligible effect on LCS#11523. A final field report that documents the metal detection and GPR survey methodologies, results, and recommendations will be forwarded to the Montana SHPO.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect archeological resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with Alternative C, would have would have adverse site-specific negligible cumulative impacts on historic structures. Alternative C would have a noticeable contribution to the adverse site-specific negligible cumulative impacts on historic structures.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative C: Road Widening - 22' Width would have *no adverse effect* on historic structures LCS#11522 and LCS#11523 located in Little Bighorn Battlefield National Monument. This environmental document and a data recovery plan (in place of a Memorandum of Agreement) have been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

**Conclusion.** Under Alternative C: Road Widening - 22' Width, the impacts could be adverse site-specific negligible for LCS #11522 and adverse site-specific negligible for LCS #11523. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative C, would have adverse site-specific negligible cumulative impacts on historic structures. Under Section 106, the determination of effect would be *no adverse effect* for historic structures.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to

opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to historic structures.

## ETHNOGRAPHIC RESOURCES

### Impact Thresholds

All of the sites discussed in the *Archeological Resources* section most likely contain ethnographic resources. All available information on ethnographic resources was compiled from the *Archeological Mitigation of the Federal Lands Highway Program Plan to Rehabilitate Tour Road, Route 10, Little Bighorn Battlefield National Monument* (NPS 2005a). The area of potential effect (APE) was identified as the construction area of the proposed alternatives. The APE for this project includes the new cut and fill slopes along the Tour Road, and the visitor center and Reno-Benteen parking areas that would be reconfigured and expanded.

For purposes of analyzing impacts to the identified ethnographic resources, the thresholds of change for intensity of an impact are defined below:

Impact Intensity	Intensity Definition
Negligible	Impact(s) would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be <i>no adverse effect</i> .
Minor	<p><b>Adverse impact</b> - impact(s) would be slight but noticeable but would neither appreciably alter resource conditions, such as traditional access or site preservation, nor the relationship between the resource and the affiliated group's body of practices and beliefs. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be <i>no adverse effect</i>.</p> <p><b>Beneficial impact</b> - would allow access to and/or accommodate a group's traditional practices or beliefs. The determination of effect on Traditional Cultural Properties for Section 106 would be <i>no adverse effect</i>.</p>
Moderate	<p><b>Adverse impact</b> - impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be <i>adverse effect</i>.</p> <p><b>Beneficial impact</b> - would facilitate traditional access and/or accommodate a group's practices or beliefs. The determination of effect on Traditional Cultural Properties for Section 106 would be <i>no adverse effect</i>.</p>
Major	<p><b>Adverse impact</b> - impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs, to the extent that the survival of a group's practices and/or beliefs would be jeopardized. The determination of effect on Traditional Cultural Properties (ethnographic resources eligible to be listed in the National Register) for Section 106 would be <i>adverse effect</i>.</p> <p><b>Beneficial impact</b> - would encourage traditional access and/or accommodate a group's practices or beliefs. The determination of effect on Traditional Cultural Properties for Section 106 would be <i>no adverse effect</i>.</p>

Ethnographic resource impacts would be considered short term if the effects lasted only during construction. Ethnographic resource impacts would be considered long term if the effects last beyond the construction period.

## Impacts of Alternative A: No - Action

**Impact Analysis.** One ethnographic site encompassing the two battlefields (Last Stand and Reno-Benteen) and one ethnographic site located on Calhoun Ridge/Lame White Man Charge wayside pullout are within the APE. At the Last Stand and Reno-Benteen ethnographic sites, degradation could continue as a result of vehicles driving off the narrow Tour Road. Impacts to ethnographic resources would be adverse site-specific negligible. There would be no impact to the ethnographic site located on Calhoun Ridge/Lame White Man Charge wayside pullout.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect ethnographic resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have adverse site-specific negligible cumulative impacts on ethnographic resources.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative A: No- Action would have *no adverse effect* on ethnographic resources located in Little Bighorn Battlefield National Monument.

**Conclusion.** The No-Action Alternative would have adverse site-specific negligible impacts on ethnographic resources. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have adverse site-specific negligible cumulative impacts on ethnographic resources and the Section 106 determination would be *no adverse effect*.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to ethnographic resources.

## Impacts of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)

**Impact Analysis.** One ethnographic site encompassing the two battlefields (Last Stand and Reno-Benteen) and one ethnographic site located on Calhoun Ridge/Lame White Man Charge wayside pullout are within the APE. Mitigation requires a NPS archeologist be on site during ground disturbance at Last Stand Hill and Reno-Benteen parking lot. The archeologist would assess the artifacts for integrity, significance, and historical contribution to the site. If artifacts were located within the APE, impacts would be adverse site-specific negligible to minor (depending on number, type and integrity). If no artifacts were found, there would be no impact to ethnographic resources.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect ethnographic resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and

reasonably foreseeable future actions, combined with Alternative B, would have adverse site-specific negligible to minor cumulative impacts on ethnographic resources. Alternative B would have a noticeable contribution to the adverse site-specific negligible to minor cumulative impacts on ethnographic resources.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would be a *no adverse effect* on ethnographic resources located in Little Bighorn Battlefield National Monument. This environmental document and a data recovery plan (in place of a Memorandum of Agreement) have been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

To minimize any potential disturbance in the Last Stand Hill battlefield and Reno-Benteen parking area, a NPS archeologist would monitor all ground disturbance. If during construction previously undiscovered archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed, if necessary, in consultation with the Montana State Historic Preservation Office (SHPO). If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

**Conclusion.** Alternative B: Road Widening - 24' Width (NPS Preferred Alternative) would have adverse site-specific negligible to minor impacts on ethnographic resources. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative B, would have adverse site-specific negligible to minor cumulative impacts on ethnographic resources and the Section 106 determination would be a *no adverse effect*.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument's *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to ethnographic resources.

## Impacts of Alternative C: Road Widening - 22' Width

**Impact Analysis.** One ethnographic site encompassing the two battlefields (Last Stand and Reno-Benteen) and one ethnographic site located on Calhoun Ridge/Lame White Man Charge wayside pullout are within the APE. Mitigation requires a NPS archeologist be on site during ground disturbance at Last Stand Hill and Reno-Benteen parking lot. The archeologist would assess the artifacts for integrity, significance, and historical contribution to the site. If artifacts were located within the APE, impacts would be adverse site-specific negligible to minor (depending on number, type and integrity). If no artifacts were found, there would be no impact to ethnographic resources.

**Cumulative Impacts.** Past, present and reasonably foreseeable future actions with the potential to affect ethnographic resources include Visitor Center Addition, Indian Memorial Project, Highway 212 Reconstruction, and improvements to the Battle Ridge trails. Overall, the past, present, and reasonably foreseeable future actions, combined with Alternative C, would have adverse site-specific negligible to minor cumulative impacts on ethnographic resources. Alternative C would have a noticeable contribution to the adverse site-specific negligible to minor cumulative impacts on ethnographic resources.

**Section 106 Summary.** After applying the Advisory Council on Historic Preservation’s criteria of adverse effects (36 CFR 800.5), the National Park Service concludes that implementation of Alternative C: Road Widening - 22’ Width would be a *no adverse effect* on ethnographic resources located in Little Bighorn Battlefield National Monument. This environmental document and a data recovery plan (in place of a Memorandum of Agreement) have been sent to the SHPO for a 30-day consultation as required in Section 106 of the NHPA.

To minimize any potential disturbance in the Last Stand Hill battlefield and Reno-Benteen parking area, a NPS archeologist would monitor all ground disturbance. If during construction previously undiscovered archeological resources are discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and an appropriate mitigation strategy developed, if necessary, in consultation with the Montana State Historic Preservation Office (SHPO). If human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3001) of 1990 would be followed.

**Conclusion.** Alternative C: Road Widening - 22’ Width (NPS Preferred Alternative) would have adverse site-specific negligible to minor impacts on ethnographic resources. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative C, would have adverse site-specific negligible to minor cumulative impacts on ethnographic resources and the Section 106 determination would be a *no adverse effect*.

Because there would be no major, adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Little Bighorn Battlefield National Monument, (2) key to the natural or cultural integrity of the monument or to opportunities for enjoyment of the park, or (3) identified as a goal in the monument’s *Final General Management and Development Concept Plans* or other relevant NPS planning documents, there would be no impairment of park resources or values related to ethnographic resources.

## **VISITOR EXPERIENCE & SAFETY**

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### **Impact Thresholds**

NPS *Management Policies 2001* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks and that the National Park Service is committed to providing appropriate, high-quality opportunities for people to enjoy the parks (NPS 2000a). Part of the purpose of Little Bighorn Battlefield National Monument is to “preserve, protect, and interpret the historic, cultural, and natural resources, including lands, pertaining to the Battle of the Little Bighorn.” The *Final General Management and Development Concept Plans* reaffirmed the importance and significance of visitor use and established provisions for better interpretation experiences by providing quality facilities for a more meaningful visitor experience (NPS 1995).

Public scoping, input from monument staff, and observation of visitation patterns, combined with an assessment of what resources are available to visitors under current management, were used to estimate the effects of the alternatives. The impact on the ability of visitors to experience a full range of Little Bighorn Battlefield National Monument resources was analyzed by examining resources and objectives presented in the monument’s significance statements. The potential for change in visitor use and experience was evaluated by identifying proposed changes to interpretation and educational opportunities, access and circulation, and safety. For purposes of analyzing impacts to visitor experience, the thresholds of change for intensity of an impact are defined below:

Impact Intensity	Intensity Definition
Negligible	Visitors would not be affected, or changes in visitor use and / or experience would be below or at the level of detection. Visitors would not likely be aware of the effects associated with the alternative.
Minor	Changes in visitor use and / or experiences would be detectable, although the changes would not be noticeable to visitors.
Moderate	Changes in visitor use and / or experience would be readily apparent and likely long term. Visitors would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.
Major	Changes in visitor use and / or experience would be readily apparent, severely adverse, or exceptionally beneficial, and have important, long-term consequences. Visitors would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

Visitor experience impacts would be considered short term if the effects lasted for the duration of construction. Visitor experience impacts would be considered long term if the effects last longer than the construction period.

### Impacts of Alternative A: No - Action

**Impact Analysis.** There would be no improvements to the Tour Road. The existing pavement and structural conditions on the Tour Road would continue to detract from visitor experiences. The paved width of the Tour Road travel lanes would continue to be narrow with no shoulder; and the pavement edge would continue to drop off at steep angles. Recreational vehicle traffic would continue to pose potential safety concerns, as these large vehicles would continue to tend to veer off of the roadway in order to avoid oncoming traffic because of the narrow roadway. As the recreational vehicles veer off the roadway, the steep pavement edge would continue to make it difficult for these vehicles to maneuver back on to the roadway safely.

Improvements to the Tour Road and expansion of the visitor center and Reno-Benteen would not occur under the No-Action Alternative. Visitor experience of interpretation and educational opportunities in the monument, including the two battlefields, visitor center, museum and archives, Custer National Cemetery, Indian Memorial, self-guiding Tour Road auto tour, self-guided walking tours and trails (Deep Ravine, Keogh / Crazy Horse, and Reno-Benteen Defense site) would continue to be impacted by insufficient parking capacity and congestion due to poor vehicle access and circulation at the visitor center and Reno-Benteen parking areas.

At the visitor center parking area, eastbound vehicles would continue to be required to drive through the visitor center parking lot when traveling from the monument entrance to the Tour Road. Buses would continue to create congestion when loading and unloading near the visitor center. At the Reno-Benteen parking area, insufficient parking capacity and an inadequate turnaround radius for larger recreation vehicles would continue to be an identified source of visitor frustration and confusion. During peak periods, vehicles would continue to turn around and continue back down the Tour Road without stopping at the Reno-Benteen monument due to insufficient parking capacity. Large recreational vehicles would continue to drive over the center median and / or outside curb either to avoid illegally parked vehicles or because the vehicle does not have an adequate turning radius to negotiate the turnaround.

The existing congestion from poor vehicle access, circulation and insufficient parking capacity in these parking areas results in adverse site-specific negligible long-term impacts to visitor experience of interpretation and educational opportunities; however, during peak visitation there would be adverse site-specific moderate long-term impacts to visitor experience. Under the No-Action

Alternative, there would be no short-term impacts to visitor experience of interpretation and educational opportunities related to access and circulation from construction-related activities.

**Cumulative Impacts.** Past, present and reasonably foreseeable future projects with the potential to affect visitor experiences include improvements to the Battle Ridge trails; visitor center addition, Indian Memorial project; Highway 212 reconstruction; and the state rest area expansion.

The improvements to the Battle Ridge trails, visitor center addition, Indian Memorial project, Highway 212 reconstruction, and the state rest area expansion, which includes a new visitor center, result in both short-term and long-term impacts on visitor experience of interpretation and educational opportunities. Improvements associated with these projects have construction-related impacts (traffic delays, etc.) on access to interpretation and educational opportunities, resulting in adverse site-specific negligible short-term impacts on visitor experience. These improvements could potentially increase the numbers of visitors to the monument. This increase in visitation would exacerbate congestion from poor vehicle access, circulation and insufficient parking capacity at the visitor center and Reno-Benteen parking areas, resulting in adverse site-specific negligible long-term impacts to visitor experience; however, during peak visitation there would be adverse site-specific moderate long-term impacts to visitor experience.

The improvements associated with the Highway 212-reconstruction project would result in long-term impacts on visitor safety. The proposed improvements under the Highway 212 project would improve visitor safety at the entrance to the monument, resulting in beneficial negligible site-specific long-term impacts on visitor experience.

The No-Action Alternative would have no effect on short-term construction-related impacts (traffic-delays, etc.) for access to interpretation and educational opportunities, and would provide adverse negligible (during non-peak visitation) to moderate (during peak visitation) contributions in the long term. Therefore, the past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have adverse negligible short-term cumulative impacts on visitor experience. Long-term cumulative impacts would be adverse negligible (during non-peak visitation) to moderate (during peak visitation) on visitor experience.

**Conclusion.** Under the No-Action Alternative, there would be no short-term impacts on visitor experiences from construction-related activities. Under the No-Action Alternative, impacts on visitor experience would continue to be adverse site-specific negligible to moderate long term due to the poor pavement and edge conditions and the narrow width of the Tour Road, and because of the inadequate parking facilities at the visitor center and Reno-Benteen parking areas. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with the No-Action Alternative, would have adverse negligible short-term cumulative impacts on visitor experience. Long-term cumulative impacts would be adverse negligible (during non-peak visitation) to moderate (during peak visitation) on visitor experience.

### **Impacts of Alternative B: Road Widening - 24' Width (NPS Preferred Alternative)**

**Impact Analysis.** Under this alternative, the Tour Road would be widened to 24-foot top width and the visitor center and Reno-Benteen parking lots would be reconstructed to provide increased parking capacity and improved traffic flow through the parking lots.

Visitor experience and safety are expected to appreciably improve due to the increased shy distance provided by the proposed improvements under Alternative B. Vehicles passing in opposing directions would not need to veer off of the roadway and/or reduce speed in order to avoid

collisions. Due to the non-standard 1-foot shoulder width, slight congestion is expected to continue on sharp curves where the tracking width of vehicles increases. Overall, the increased roadway width and improved shoulder would allow visitors to travel more comfortably and better enjoy the monument. This would be a beneficial moderate long-term impact.

Improvements to the visitor center and Reno-Benteen parking areas would improve visitor access to interpretation and educational opportunities, including the two battlefields, visitor center, museum and archives, Custer National Cemetery, Indian Memorial, self-guiding Tour Road auto tour, self-guided walking tours and trails (Deep Ravine, Keogh / Crazy Horse, and Reno-Benteen Defense site).

The proposed improvements at the visitor center parking area would improve traffic flow and parking conditions in the area, reducing traffic congestion caused by conflicts among through traffic, parking vehicles, buses, and recreational vehicles. A dedicated bus drop-off space would be provided in the lot at the entrance to the visitor center, allowing buses to load and unload without having to stop in the travel lane. The proposed improvements to the Reno-Benteen parking area would accommodate an increase in the number of designated parking spaces for RVs and buses, would include designated parking spaces for motorcycles, allow tour buses to load and unload without stopping traffic in the parking lot, and provide an adequate turning radius for large recreational vehicles at the turnaround. The improved access to interpretation and educational opportunities from reduced congestion at the visitor center and Reno-Benteen parking areas would have beneficial site-specific minor long-term impacts on visitor experience; however, during peak visitation there would be beneficial site-specific moderate long-term impacts to visitor experience.

Access to interpretation and educational opportunities would be occasionally impacted during construction from construction-related activities. Between November 1 and April 1 the entire Tour Road could be closed for up to four weeks due to construction; however, the visitors could access the visitor center parking area and walk to the Indian Memorial and Last Stand Hill. In addition, between October 1 and April 30, the road could be closed during construction operations from Calhoun Loop to the terminus of the road at Reno Benteen. This same segment beyond Calhoun Loop could be closed Monday through Thursday between May 1 and Memorial Day weekend and Labor Day Weekend and September 30. Delays to traffic would result in visitor frustration; however, these delays would be temporary. These construction-related actions affecting access and circulation would result in adverse site-specific minor short-term impacts to visitor experience in the monument.

**Cumulative Impacts.** Past, present and reasonably foreseeable future projects with the potential to affect visitor experiences include improvements to the Battle Ridge trails; visitor center addition, Indian Memorial project; Highway 212 reconstruction; and the state rest area expansion.

The improvements to the Battle Ridge trails, visitor center addition, Indian Memorial project, Highway 212 reconstruction, and the state rest area expansion, which includes a new visitor center, result in both short-term and long-term impacts on visitor experience of interpretation and educational opportunities. Improvements associated with these projects have construction-related impacts (traffic delays, etc.) on access to interpretation and educational opportunities, resulting in adverse site-specific negligible short-term impacts on visitor experience. These improvements could potentially increase the numbers of visitors to the monument. This increase in visitation would exacerbate congestion from poor vehicle access, circulation and insufficient parking capacity at the visitor center and Reno-Benteen parking areas, resulting in adverse site-specific negligible long-term impacts to visitor experience; however, during peak visitation there would be adverse site-specific moderate long-term impacts to visitor experience.

The improvements associated with the Highway 212-reconstruction project would result in long-term impacts on visitor safety. The proposed improvements under the Highway 212 project would improve visitor safety at the entrance to the monument, resulting in beneficial negligible site-specific long-term impacts on visitor experience.

Alternative B would have a minor effect on the short-term construction-related impacts (traffic-delays, etc.) for access to interpretation and educational opportunities, and would provide beneficial minor to moderate contributions in the long term. Therefore, the past, present, and reasonably foreseeable future actions, combined with the Alternative B, would have adverse minor short-term cumulative impacts on visitor experience. Long-term cumulative impacts would be beneficial minor (during non-peak visitation) to moderate (during peak visitation) on visitor experience.

**Conclusion.** Under Alternative B, impacts on visitor experiences would be adverse site-specific minor in the short term from construction-related activity impacts on access and circulation. Upon completion of Alternative B, there would be beneficial minor to moderate long-term impacts on the visitor experience from the improved pavement and edge conditions and the wider width of the Tour Road and improved parking facilities at the visitor center and Reno-Benteen parking areas. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative B, would have adverse minor short-term cumulative impacts on visitor experience. Long-term cumulative impacts would be beneficial minor (during non-peak visitation) to (during peak visitation) moderate on visitor experience.

### Impacts of Alternative C: Road Widening - 22' Width

**Impact Analysis.** Under this alternative, the Tour Road would be widened to 22-foot top width and the visitor center and Reno-Benteen parking lots would be reconstructed to provide increased parking capacity and improved traffic flow through the parking lots.

Visitor experience and safety are expected to slightly improve due to the increased shy distance provided by the proposed improvements under Alternative C. Vehicles passing in opposing directions would not need to veer off of the roadway and/or reduce speed in order to avoid collisions. Due to the non-standard 10-foot travel lane width, large RVs and tour buses would experience some difficulty when encountering other vehicles on sharp curves. Off-tracking from the designated paved shoulder could continue to occur at sharp curves. Overall, the consistent roadway width and improved shoulder would allow visitors to travel more comfortably and better enjoy the monument. This would be a beneficial minor long-term impact

Improvements to the visitor center and Reno-Benteen parking areas would improve visitor access to interpretation and educational opportunities, including the two battlefields, visitor center, museum and archives, Custer National Cemetery, Indian Memorial, self-guiding Tour Road auto tour, self-guided walking tours and trails (Deep Ravine, Keogh / Crazy Horse, and Reno-Benteen Defense site).

The proposed improvements at the visitor center parking area would improve traffic flow and parking conditions in the area, reducing traffic congestion caused by conflicts among through traffic, parking vehicles, buses, and recreational vehicles. A dedicated bus drop-off space would be provided in the lot at the entrance to the visitor center, allowing buses to load and unload without having to stop in the travel lane. The proposed improvements to the Reno-Benteen parking area would accommodate an increase in the number of designated parking spaces for RVs and buses, would include designated parking spaces for motorcycles, allow tour buses to load and unload without stopping traffic in the parking lot, and provide an adequate turning radius for large recreational vehicles at the turnaround. The improved access to interpretation and educational

opportunities from reduced congestion at the visitor center and Reno-Benteen parking areas would have beneficial site-specific minor long-term impacts on visitor experience; however, during peak visitation there would be beneficial site-specific moderate long-term impacts to visitor experience.

Access to interpretation and educational opportunities would be occasionally impacted during construction from construction-related activities. Between November 1 and April 1 the entire Tour Road could be closed for up to four weeks due to construction; however, the visitors could access the visitor center parking area and walk to the Indian Memorial and Last Stand Hill. In addition, between October 1 and April 30, the road could be closed during construction operations from Calhoun Loop to the terminus of the road at Reno Benteen. This same segment beyond Calhoun Loop could be closed Monday through Thursday between May 1 and Memorial Day weekend and Labor Day Weekend and September 30. Delays to traffic would result in visitor frustration; however, these delays would be temporary. These construction-related actions affecting access and circulation would result in adverse site-specific minor short-term impacts to visitor experience in the monument.

**Cumulative Impacts.** Past, present and reasonably foreseeable future projects with the potential to affect visitor experiences include improvements to the Battle Ridge trails; visitor center addition, Indian Memorial project; Highway 212 reconstruction; and the state rest area expansion.

The improvements to the Battle Ridge trails, visitor center addition, Indian Memorial project, Highway 212 reconstruction, and the state rest area expansion, which includes a new visitor center, result in both short-term and long-term impacts on visitor experience of interpretation and educational opportunities. Improvements associated with these projects have construction-related impacts (traffic delays, etc.) on access to interpretation and educational opportunities, resulting in adverse site-specific negligible short-term impacts on visitor experience. These improvements could potentially increase the numbers of visitors to the monument. This increase in visitation would exacerbate congestion from poor vehicle access, circulation and insufficient parking capacity at the visitor center and Reno-Benteen parking areas, resulting in adverse site-specific negligible long-term impacts to visitor experience; however, during peak visitation there would be adverse site-specific moderate long-term impacts to visitor experience.

The improvements associated with the Highway 212-reconstruction project would result in long-term impacts on visitor safety. The proposed improvements under the Highway 212 project would improve visitor safety at the entrance to the monument, resulting in beneficial negligible site-specific long-term impacts on visitor experience.

Alternative C would have a minor effect on the short-term construction-related impacts (traffic-delays, etc.) for access to interpretation and educational opportunities, and would provide beneficial minor to moderate contributions in the long term. Therefore, the past, present, and reasonably foreseeable future actions, combined with the Alternative C, would have adverse minor short-term cumulative impacts on visitor experience. Long-term cumulative impacts would be beneficial minor (during non-peak visitation) to moderate (during peak visitation) on visitor experience.

**Conclusion.** Under Alternative C, impacts on visitor experiences would be adverse site-specific minor in the short term from construction-related activity impacts on access and circulation. Upon completion of Alternative C, there would be beneficial minor to moderate long-term impacts on the visitor experience from the improved pavement and edge conditions and the wider width of the Tour Road and improved parking facilities at the visitor center and Reno-Benteen parking areas. The cumulative effects of these past, present, and reasonably foreseeable future actions, combined with Alternative C, would have adverse minor short-term cumulative impacts on visitor experience.

**Long-term cumulative impacts would be beneficial minor (during non-peak visitation) to (during peak visitation) moderate on visitor experience.**

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# CONSULTATION AND COORDINATION

## SCOPING

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Quarterly letters providing updates and requesting comments were sent to Custer Battlefield Historical and Museum Association (CBHMA), Friends of the Little Bighorn Battlefield, and Custer Battlefield Preservation Association starting in July 2004. Little Bighorn Battlefield National Monument maintains a website with a link to the website of a park partner, Friends of the Little Bighorn Battlefield. The Superintendent provides periodic updates for the Friends of the Little Bighorn Battlefield and they publish this information on their website and in their newsletter.

## AGENCY, TRIBAL AND ORGANIZATION CONSULTATION

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Agencies, tribes, and organizations contacted for information that assisted in identifying issues, or that would provide an opportunity to review and comment on this environmental assessment / assessment of effect, are listed below.

### Federal Agencies

Advisory Council on Historic Preservation

U.S. Department of the Interior – Fish and Wildlife Service

U.S. Department of Agriculture - Natural Resource Conservation Service

Western Federal Lands Highway Division

### State and Local Agencies

Montana Historical Society Office of Archeology and Historic Preservation (Office of State Historic Preservation Officer)

Montana Fish, Wildlife and Parks

Montana Natural Heritage Program

Montana Natural Resource Information System

Big Horn County

### American Indian Tribes

Crow Tribe at Crow Agency, Montana

### Organizations and Individuals

Custer Battlefield Historical and Museum Association (CBHMA)

Friends of the Little Bighorn Battlefield

Custer Battlefield Preservation Association

## **REGULATIONS AND PERMITS**

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The National Park Service would comply with all applicable federal, state, and local regulations when implementing improvements under the proposed action. Regulatory requirements for this project are expected to include the following permits and approvals.

### **Water Quality and Wetlands**

Section 401 of the Clean Water Act (CWA) certification is permitted through the Montana Department of Environmental Quality (MDEQ) Permitting and Compliance Division to ensure water quality is maintained. MDEQ is authorized to deny, certify, or condition permits or licenses primarily to ensure the activity would comply with state water quality standards. In addition, MDEQ looks at whether the activity would violate effluent limitations, new source performance standards, toxic pollutants, and other water resource requirements of state / tribal law or regulation. The Section 401 review allows for better consideration of state-specific concerns.

Section 402 of the CWA is also permitted through the MDEQ Permitting and Compliance Division, which administers the Montana Pollutant Discharge Elimination System (MPDES) program. The MPDES program is intended to control point source discharges of wastewater such that water quality in the receiving streams is protected. A MPDES permit from MDEQ requires a storm water pollution prevention plan that includes a temporary erosion and sediment control plan. The erosion and sediment control plan identifies best management practices (BMPs), as well as site-specific measures to minimize erosion and prevent eroded sediment from leaving the work zone. The proposed project crosses three intermittent tributaries to the Little Bighorn River via culverts. Under the action alternatives, concrete box extensions and new wingwalls would be constructed on culverts at Deep Coulee and Medicine Tail Coulee. Work on these culverts would be done when water is not flowing in the coulee.

A Montana Stream Protection Act (SPA) 124 permit is required for projects that may affect the natural existing shape and form of any stream or its banks or tributaries. The proposed project crosses three intermittent tributaries to the Little Bighorn River via culverts. Under the action alternatives, concrete box extensions and new wingwalls would be constructed on culverts at Deep Coulee and Medicine Tail Coulee. Work on these culverts would be done when water is not flowing in the coulee.

The U.S. Army Corps of Engineers is responsible for authorizing the discharge of dredge and fill materials into waters of the U.S., including wetlands, under Section 404 of the CWA. Under the proposed project, there would be no loss of wetlands. During final design and construction, the National Park Service would further evaluate potential impacts to wetlands and identify measures to avoid and mitigate if necessary. Should unavoidable impacts to wetlands occur, a Statement of Findings for wetlands would be prepared and the monument would consult with the U.S. Army Corps of Engineers for any regulatory authorization.

## **LIST OF PREPARERS**

### **NATIONAL PARK SERVICE**

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#### **Denver Service Center**

Cam Hugie, Project Manager

David Hayes, Cultural Resource Specialist

Kim Hartwig, Natural Resource Specialist

Russell Hass, Revegetation Technical Advisor

#### **Midwest Archeological Center**

Doug Scott, Archeologist

#### **Intermountain Region**

David Keough, Intermountain Region FLHP Coordinator

Cheryl Eckhardt, NEPA Specialist

#### **Little Bighorn Battlefield National Monument**

Darrell Cook, Superintendent

John Doerner, Chief Historian

Michael Stops, Chief Ranger

### **FEDERAL HIGHWAY ADMINISTRATION**

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Craig Dewey, WFLHD Project Manager

Adam Aloha, WFLHD Lead Designer

Jody Marshall, WFLHD Environmental Compliance Engineer

Mike Boynton, WFLHD Archeologist

Astrid Gray, WFLHD Designer

### **CONSULTANTS**

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**David Evans and Associates, Inc.**

**Debra Perkins-Smith, AICP, Project Manager**

**Colleen Kirby Roberts, AICP, Planner**

**Chad Ricklefs, AICP, Environmental Planner**

**Phil Rickus, Ecologist**

**Dave Kennedy, Wildlife Biologist**

**Emerson Bull Chief, Biologist,**

**Greg Sorensen, Senior Editor**

**Mike Cassell, Senior Graphic Specialist**

## **APPENDIX A: SHPO CONSULTATION DOCUMENTATION**

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United States Department of the Interior  
NATIONAL PARK SERVICE



DENVER SERVICE CENTER  
12795 West Alameda Parkway  
Post Office Box 25287  
Denver, Colorado 80225-0287

IN REPLY REFER TO:  
H4217(LIBI)

August 19 2003

Jane Crisler  
Historic Preservation Specialist  
Advisory Council on Historic Preservation  
12136 West Bayaud Avenue  
Suite 330  
Lakewood, CO 80228

RE: Rehabilitate Tour Road, Route 10 – Little Bighorn Battlefield National Monument

Dear Jane:

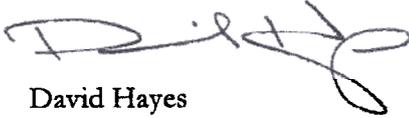
The National Park Service proposes to widen and realign the existing 5.2 mile, 18 – 20 foot wide paved Tour Road to a 20 – 22 foot wide road. Most of the road was originally a wagon road used by the US Army. The road surface is basically the native soil with imported aggregates and liquid asphalt mixed on the road by a grader, and spread back over the roadway. In 2001 a portion of the road was given a 2" overlay without widening the road prism. This project was determined to be a Categorical Exclusion and concurrence was signed by Montana SHPO on May 15, 2001. Portions of the new overlay have created a steep edge between the pavement and the narrow shoulder, potentially causing vehicles to "drive off" the pavement and break-up the pavement edges. The road now has an average daily traffic during a peak summer day of 1,200 vehicles that cause the thin pavement to deteriorate and break up. The vehicles using the road have also grown in width (more buses and RV's) thus their wheels tend to ride on the edge of the narrow roadway. This causes rapid breakdown and the development of ruts and abrupt shoulder drop-offs in the soft soil shoulders.

The actions proposed by the National Park Service could adversely impact the Reno-Bentzen Historic District, the right-of-way through the Crow Indian Reservation, and the Calhoun Hill and Last Stand Hill areas. Archeological sites along the road that could be impacted are PROVIDE A LIST OF THE KNOWN ARCHEOLOGICAL SITES ALONG THE ROAD. The Federal Lands Highway program has agreed to fund an archeological survey of the project area as well as any Phase III excavations approved through the Sec. 106 process. Also, park staff and Dr. Mark Baumler, Montana State Historic Preservation Officer, are exploring other alternatives, as well as ways to avoid, minimize, or mitigate potential adverse effects. Because of the potential for adverse impacts, and because the park requested that I prepare an environmental assessment (EA) for the proposed project, I am writing to ask whether or not the Advisory Council would be interested in participating in discussions of

alternatives and mitigation, as well as to inform you of the park's intent of using the EA to meet its §106 obligations (36 CFR Part 800.8).

I have enclosed a brochure describing Little Bighorn Battlefield National Monument. If you have any questions or concerns, you can contact me by telephone at (303) 969-2975.

Sincerely,



David Hayes  
Denver Service Center, Planning Branch,  
National Park Service

attachment

cc, w/o att:

John Doerner, Chief Historian, Little Bighorn Battlefield National Monument  
Darrell Cook, Superintendent, Little Bighorn Battlefield National Monument  
Jody Marshall, Environmental Compliance Engineer, Western Federal Lands Highway Division



United States Department of the Interior  
NATIONAL PARK SERVICE



DENVER SERVICE CENTER  
12795 West Alameda Parkway  
Post Office Box 25287  
Denver, Colorado 80225-0287

IN REPLY REFER TO:  
H4217

August 19, 2003

Dr. Mark Baumler  
Montana State Historic Preservation Office  
1410 8<sup>th</sup> Avenue  
P. O. Box 202202  
Helena, Montana 59620-1202

RE: Rehabilitate Tour Road, Route 10, Little Bighorn Battlefield, National Monument

Dear Dr. Baumler:

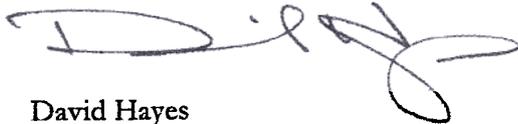
The National Park Service proposes to widen and realign the existing 5.2 mile, 18 – 20 foot wide paved Tour Road to a 20 – 22 foot wide road. Most of the road was originally a wagon road used by the US Army. The road surface is basically the native soil with imported aggregates and liquid asphalt mixed on the road by a grader, and spread back over the roadway. In 2001 a portion of the road was given a 2" overlay without widening the road prism. This project was determined to be a Categorical Exclusion and concurrence was signed by Montana SHPO on May 15, 2001. Portions of the new overlay have created a steep edge between the pavement and the narrow shoulder, potentially causing vehicles to "drive off" the pavement and break-up the pavement edges. The road now has an average daily traffic count during a peak summer day of 1,200 vehicles that cause the thin pavement to deteriorate and break up. The vehicles using the road have also grown in width (more buses and RV's) thus their wheels tend to ride on the edge of the narrow roadway. This causes rapid breakdown and the development of ruts and abrupt shoulder drop-offs in the soft soil shoulders.

The actions proposed by the National Park Service could adversely impact the (LIST THE HISTORIC DISTRICTS), the right-of-way through the Crow Indian Reservation. Archeological sites along the road that could be impacted are (PROVIDE A LIST OF THE KNOWN ARCHEOLOGICAL SITES ALONG THE ROAD). The Federal Lands Highway Program has agreed to fund an archeological survey of the project area as well as any Phase III excavations approved through the Sec. 106 process. We have asked Dr. Doug Scott (Midwest Archeological Center, National Park Service) to write a research design for the archeological mitigation of the project. Superintendent Cook, park staff, Dr. Scott, and I would like to meet with you or someone from your staff to discuss with the tribal affiliates the project and possible solutions to

minimize the impact to the cultural and natural resources. We have scheduled a meeting for 9:00am on October 24<sup>th</sup>, 2003 at the park. Please let me know if you or someone from your office will attend. Because of the potential for adverse impacts, and because the park requested that I prepare an environmental assessment (EA) for the proposed project, I am writing to inform you of the park's intent of using the EA to meet its §106 obligations (36 CFR Part 800.8).

If you have any questions or concerns, you can contact me by telephone at (303) 969-2975.

Sincerely,



David Hayes  
Environmental Coordinator, Cultural Resource Specialist,  
Denver Service Center, Transportation Branch,  
National Park Service

attachment

cc, w/o att:

John Doerner, Chief Historian, Little Bighorn Battlefield National Monument

Darrell Cook, Superintendent, Little Bighorn Battlefield National Monument

Jody Marshall, Environmental Compliance Engineer, Western Federal Lands Highway Division

## REFERENCES

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### David Evans and Associates, Inc (DEA).

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# GLOSSARY

**3R** - Rehabilitate, restore and resurface road project.

**100-year floodplain** - The land adjacent to a river corridor that would be covered by water during a 100-year flood event. A 100-year flood event has a 1 percent probability of occurring during any given year.

**Affected environment** - The existing biological, physical, cultural, social, and economic conditions that are subject to both direct and indirect changes as a result of actions described within alternatives under consideration.

**Alternatives** - A reasonable range of options that can accomplish an agency's objectives.

**Area of Potential Effect** - is the **geographic area** or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. The area of potential effects is influenced by the **scale and nature of the undertaking** and may be different for different kinds of **effects** caused by the undertaking.

**Best management practices** - Effective, feasible (including technological, economic, and institutional considerations) conservation practices and land- and water-management measures that avoid or minimize adverse impacts to natural and cultural resources. Best Management Practices may include schedules for activities, prohibitions, maintenance guidelines, and other management practices.

**CEQ** - The President's Council on Environmental Quality (CEQ) was established by the National Environmental Policy Act (NEPA). The council's mission is to oversee and develop national environmental policy.

**Cultural resources** - Aspects of a cultural system that are valued by or significantly representative of a culture or that contain significant information about a culture. A cultural resource may be a tangible entity or a cultural practice. Tangible cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, and as archaeological resources, cultural landscapes, structures, museum objects, and ethnographic resources for National Park Service management purposes.

**Cumulative actions** - Actions that, when viewed with other actions in the past, the present, or the reasonably foreseeable future regardless of who has undertaken or will undertake them, have an additive impact on the resource the proposal would affect.

**Cumulative effects** - Effects on the environment that result from the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

**Cumulative impact** - The impacts of cumulative actions.

**Environmental assessment** - A brief NEPA document that is prepared to (a) help determine whether the impact of a proposed action or alternatives could be significant; (b) aid NPS in compliance with NEPA by evaluating a proposal that will have no significant impacts, but that may have measurable adverse impacts; or (c) evaluate a proposal that either is not described on the list of categorically excluded actions, or is on the list but exceptional circumstances apply.

**Environmental impact statement (EIS)** - A detailed NEPA document that is prepared when a proposed action or alternatives have the potential for significant impact on the human environment.

**Environmental justice** - Ensuring the rights of low-income people and communities of color to experience and enjoy clean and healthy environments. Executive Order 12898 requires that the National Park Service ensures that its programs, policies, and activities do not exclude, discriminate, or deny persons because of their race, color, or national origin.

- Environmentally preferred alternative** - Of the action alternatives analyzed, the one that would best promote the policies in NEPA section 101.
- Erosion** - The loosening and transportation of soil, chiefly by wind and running water.
- Finding of No Significant Impact (FONSI)** - A determination based on an EA and other factors in the public planning record for a proposal that, if implemented, would have no significant impact on the human environment.
- Floodplain** - Land on either side of a stream or river that is submerged during floods.
- Fugitive dust** - The dust released from activities associated with construction, manufacturing, or transportation.
- Human environment** - Defined by CEQ as the natural and physical environment, and the relationship of people with that environment. Although the socioeconomic environment receives less emphasis than the physical or natural environment in the CEQ regulations, NPS considers it to be an integral part of the human environment.
- Hydrology** - The science dealing with the properties, distribution, and circulation of water on the surface of the land, in the soil and underlying rocks, and in the atmosphere.
- Impact topics** - Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration and timing of the effect to each of these resources is evaluated in the impact section of an EA or an EIS.
- Jurisdictional wetlands** - Those wetlands that are regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.
- Mitigation** - A modification of the proposal or alternative that lessens the intensity of its impact on a particular resource.
- Mitigation measures** - Specific commitments made during the environmental evaluation and study process that serve to moderate or lessen impacts deriving from the proposed action. These measures may include planning and development commitments, environmental measures, and agreements with resource or other agencies to effect construction or post construction action.
- National Environmental Policy Act (NEPA)** - Established by Congress in 1969, NEPA requires that Federal Agencies consider social, environmental and economic impacts when evaluating federal actions. This could include the preparation of categorical exclusions, environmental assessments (EAs), or environmental impact statements (EISs) for projects with the potential to result in significant effects on the environment.
- National Register of Historic Places (NRHP)** - The comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state, and local significance in American history, architecture, archeology, engineering, and culture. This list is maintained by the National Park Service under authority of the National Historic Preservation Act of 1966.
- NEPA process** - The objective analysis of a proposed action to determine the degree of its environmental and interrelated social and economic impacts on the human environment, alternatives and mitigation that reduce that impact, and the full and candid presentation of the analysis to, and involvement of, the interested and affected public.
- No Action Alternative** - An alternative in an environmental assessment or environmental impact statement that continues current management direction. A no action alternative is a benchmark against which action alternatives are compared.
- Noxious weeds** - Plant species that are generally aggressive, difficult to manage, poisonous, toxic, parasitic, a carrier or host of serious insects or disease, and are nonnative, new, or uncommon to the United States. These species are designated as noxious weeds by the Secretary of Agriculture or by the responsible state official.
- Preferred alternative** - The alternative an NPS decision-maker has identified as preferred.

**Revegetation** - Replacement or augmentation of native plants in an area largely or entirely denuded of vegetation.

**Scoping** - Internal NPS decision-making on issues, alternatives, mitigation measures, the analysis boundary, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, defining purpose and need, and so forth. External scoping is the early involvement of the interested and affected public.

**Soundscape** - The natural soundscape is the aggregate of all the natural sounds that occur in parks, together with the physical capacity for transmitting sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive, and can be transmitted through air, water, or solid materials.

**Wetlands** - Those areas that are inundated or saturated by surface water or ground water at a frequency or duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

**Wilderness** - Areas protected by provisions of the Wilderness Act of 1964. These areas are characterized by a lack of human interference in natural processes; generally, there are no roads, structures, installations, and the use of motorized equipment is not allowed.

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.



National Park Service

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